Should We Tell the Boss? CIOs reveal the messages they want to hear loud and clear from staffers – and the things they never, ever want to hear. PAGE 36

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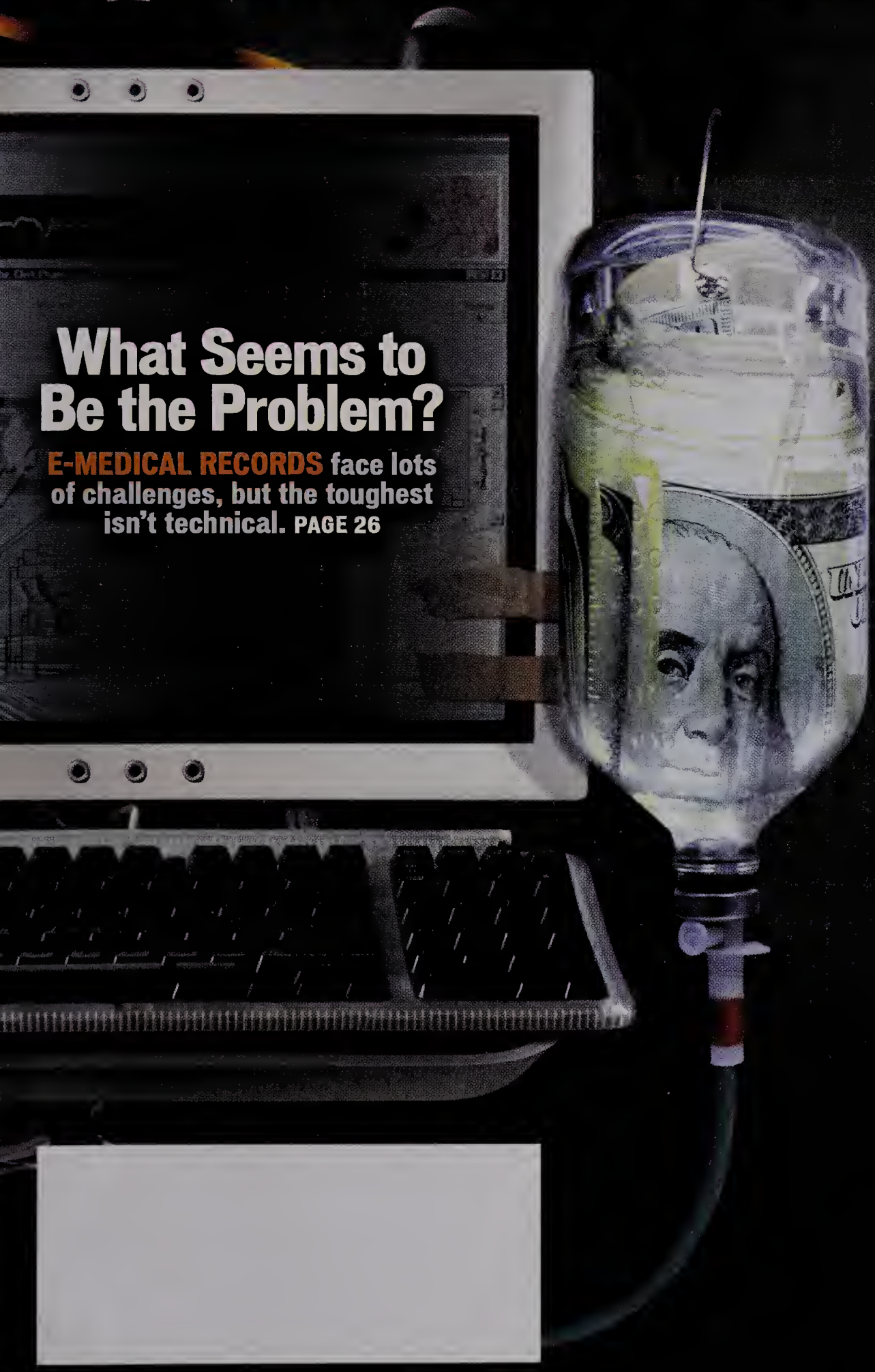

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ready for

Flight crews don't have an office to check into. At Continental Airlines, they have the Web-based Crew Communications System, where they log on, check schedules, and trade shifts. To ensure everyone arrives on time, they migrated to Windows Server® 2008. Get the full story at **serverunleashed.com**

Windows Server 2008

Airlines' crew members are

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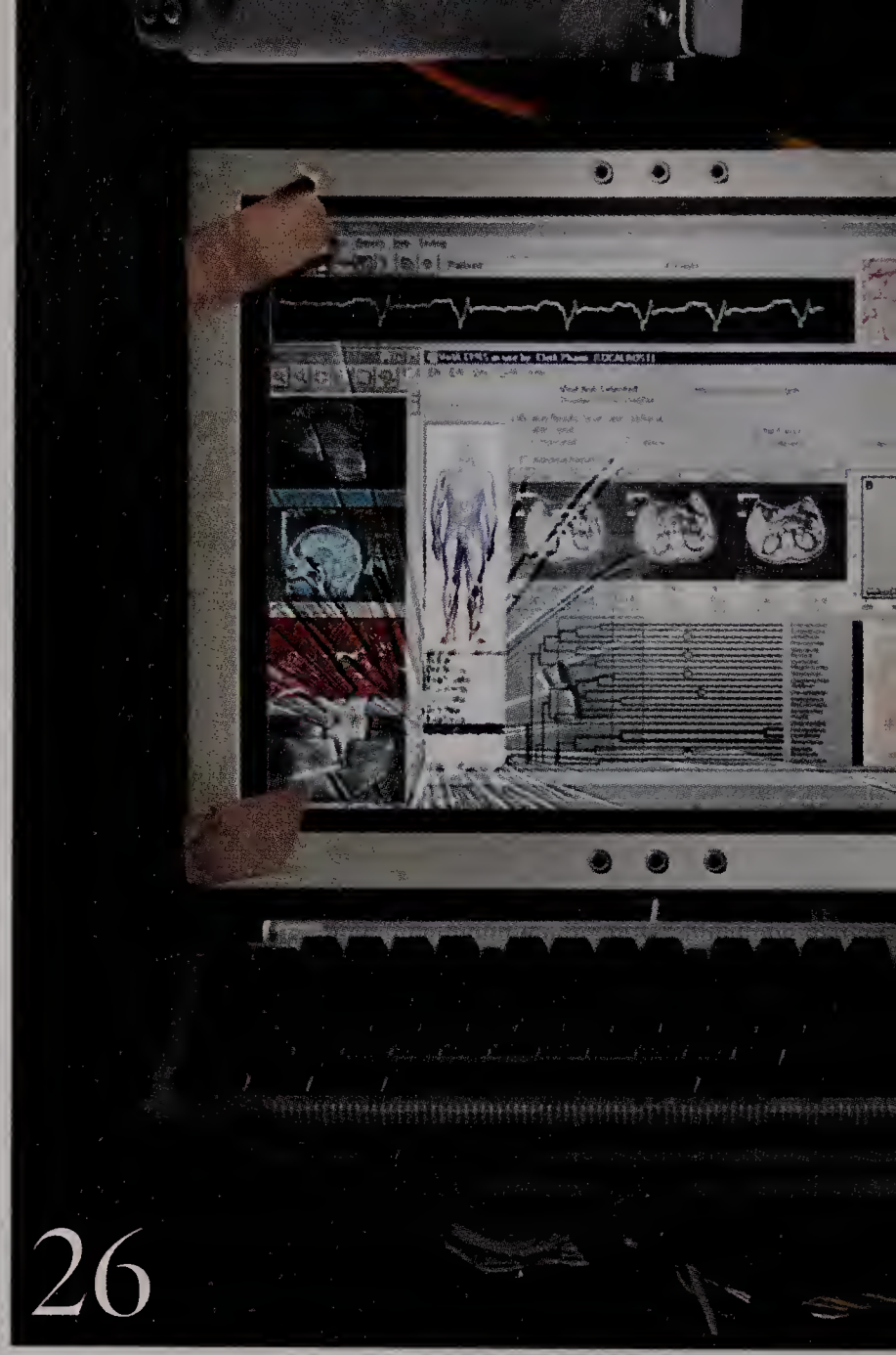

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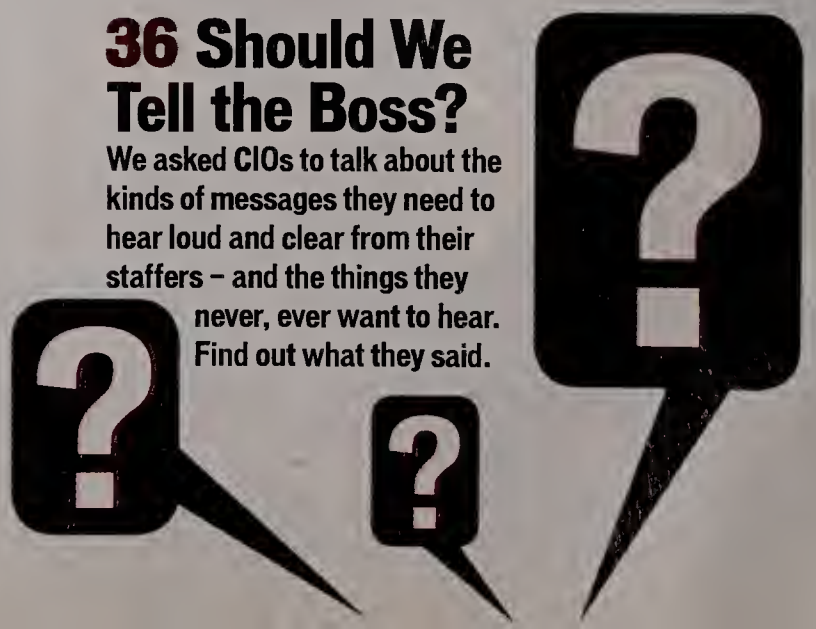

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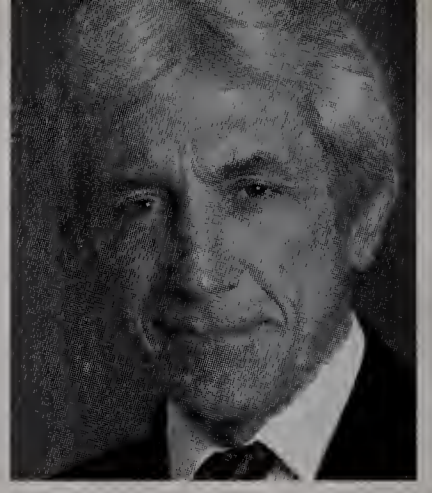
EDITOR'S NOTE

Don Tennant

Insight and Denial



INFORMATION TECHNOLOGY pros are an insightful breed. I know my fair share of them, and I've noticed that a lot of them tend to focus on how practical information and lessons learned can be applied to their work, even when the lessons come from outside of the profession.

An example presented itself a couple of weeks ago in an e-mail exchange with Dale Frantz, CIO at Auto Warehousing Co. I'd recounted a story about a mishap I'd had at our recent Infrastructure Management World conference at the new Gaylord National Hotel near Washington.

I had driven my beloved Mazda MX-5 (the model formerly known as Miata) from Massachusetts, and I entrusted it to the hotel's parking valets for safekeeping. On the morning I checked out, I called to have my car retrieved and waited at the hotel's entrance. And waited. And waited.

After about 30 minutes and several inquiries, I was finally given the apologetic explanation that the police had one of the streets blocked off. Another 15 or 20 minutes passed, and a sympathetic bellman said there had been an accident near the valet lot and a backlog was forming because a lot of people were checking out. About 20 minutes later, a valet who had been fetching cars said he had seen the silver Miata and there was . . . um . . . a problem getting it out of the lot. Finally, I was approached by the head valet manager. "Mr. Tennant," he said, "I have some bad news."

There had been an accident, all right. It turned out that the young woman who was retrieving my car hit another valet who had run out in front of her, then she swerved into a pole and smashed up the left side of the car. The poor guy she hit suffered a compound leg fracture and was taken away in an ambulance, so I could hardly get too upset when I saw the damage to my car. At least it was still drivable, and it can be fixed. There was only one thing that really bothered me. Why was I kept in the dark for well over an hour? Why wasn't I immediately informed? It's not like I wouldn't eventually find out, you know?

People in the IT industry have some strange habits, Frantz said, most of which are self-destructive.

I found Frantz's response to the tale very interesting.

"There's a career IT parallel here," he wrote. "When IT projects have problems, it seems that the 'delay and cover up' is what happens with reporting back to senior management. 'Maybe the CEO won't notice that we're not delivering this project well past the time expected,' or 'Maybe the CEO/CFO won't notice the fact that our project has been in a wreck and is severely damaged. Maybe our internal customers will just ignore it and go away.' "

People in the IT industry have some strange habits, Frantz said, most of which are self-destructive. I would add that slipping into denial mode may be the most destructive of all.

You may recall from our reporting that Frantz has embarked on a pioneering project to migrate his formerly all-Microsoft IT shop at AWC to the Mac. He mentioned in our e-mail exchange that the conversion, which began about a year ago, is ahead of schedule and has already saved him nearly $1 million in license fees.

Yet there is still widespread denial among IT pros that Apple in the enterprise is anything but a "novelty" or that it's a viable Microsoft alternative (check out the reader comments to our story "Study: 8 in 10 Businesses Now Using Macs," posted on our Web site on June 26).

Meanwhile, Frantz says AWC is "thriving during these bleak economic times," due in no small part to his switch to Macs. That's something that all those IT pros who think their CEOs won't notice the Microsoft money pit might want to consider. ■

Don Tennant *is editorial director of* Computerworld *and* InfoWorld. *Contact him at don_tennant@computerworld.com, and visit his blog at* http://blogs.computerworld.com/tennant.

Genderless Insights

Don Tennant's June 23 column, "The Bigger Question," on gender in IT was insightful, but not necessarily because of anything to do with gender. Please let me explain.

I have been in IT for over 40 years. I knew I was in a non-mentoring business. I knew that I worked alone a lot. I knew that I worked long hours to get things done. I knew that I carried work home to "have fun" on the weekends. I knew that I would go into work in the middle of the night once in a while. I knew that my social life was almost nonexistent. I knew lots of the things Tennant mentioned and alluded to, but this was the first time I saw it articulated in such plain English. I was able to open my eyes and see exactly what he was saying.

Thanks for saying what I have been working too hard to be able to see.

Dave Bonar, *Greater New Orleans*

Finding True Diversity

The Grill interview with Laraine Rodgers [June 23] was terrific — what a tremendous career arc, with the added dimension of her experiences as a woman in IT.

And this same issue of the magazine included columns from Virginia Robbins and C.J. Kelly. These women all had something interesting to say about IT, but from a non-male perspective.

Computerworld is doing a great job finding and showcasing IT professionals across the spectrum. These are not the "same old, same old" standard-bearers for symbolic diversity that I was seeing over and over in earlier days (Carly Fiorina, anyone?), but a truly diverse and interesting group.

Thanks for making the effort to identify and cover IT from so many different perspectives.

Elizabeth Gray, *PMP, business systems analyst, Austin*

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12 Quick Hacks for Firefox 3

HANDS ON: Think you've seen all there is to see of Firefox 3's new features? Wait, there's more – check out these cool and useful hacks.

Google Is Doing WHAT?

Its motto is "Don't be evil," but it looks like anything and everything else imaginable is pretty much fair game – not to mention some wildly rumored projects that we asked the company to confirm or deny.

How Much Is Too Much? Upgrade Your Notebook Without Going Over the Line

Does your laptop have enough RAM? Does a hard disk or flash drive provide more bang for the buck? These questions are expensive imponderables for most laptop buyers, but our tests reveal the optimal configuration for your laptop.

It's Not Vista: Windows Server 2008 Gets the Nod From IT

Most people in a new *Computerworld* survey said they will adopt the new server operating system – but migration will be gradual.

Independence Day (From the Grid, That Is)

Make your own "declaration of independence," says columnist Mike Elgan, and set yourself up with the right data plan and the right phone, laptop and other devices so you're ready at any time to do whatever you want do to and go wherever you want to go.

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News Digest

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THE WEEK AHEAD

TUESDAY: Oracle is due to release 45 software patches as part of its latest quarterly batch of security fixes.

TUESDAY: The Senate Judiciary Committee's antitrust subcommittee plans to hold a hearing on the search-results advertising deal signed by Google and Yahoo last month.

THURSDAY: Microsoft and Google are both scheduled to report their latest financial results. Chip rivals Intel and AMD also plan to file earnings reports this week.

GETTY IMAGES

IT MANAGEMENT

Outsourcing Deal, Layoffs Lead to End of Tax Breaks

THE NIELSEN CO. is giving up tax breaks that have netted it $1.4 million since 2001, in response to political fallout from an IT offshoring deal that has led to layoffs at its global technology center in Oldsmar, Fla.

Nielsen, which is best known for measuring TV audiences, began getting the tax breaks after agreeing to build the $100 million facility in Oldsmar, west of Tampa. The incentives were pegged to the number of jobs paying at least $52,000 annually at the tech center, which had about 1,200 employees at first and grew its workforce to 1,700.

In addition to the $1.4 million in tax breaks that Nielsen has received from the Oldsmar and Pinellas County governments, the company got $1.7 million from the state under an incentive program that has expired. The local incentives, though, were scheduled to continue until 2016.

But then last October, Nielsen announced a 10-year, $1.2 billion outsourcing agreement with India-based Tata Consultancy Services Ltd. That move was followed in April by the news that 117 people at the Oldsmar tech center would be laid off.

Although 50 of those employees have since been hired by Tata, Nielsen late last month said that it was cutting another 170 jobs in Oldsmar — and that some of the affected workers are training Tata employees to do their work. The company now expects to have about 1,300 employees at the facility by year's end, plus 250 or so contract workers.

Gary Holmes, a spokesman for Nielsen, said the company decided to pull out of the tax-break program after members of the Oldsmar city council expressed "second thoughts about the agreement" because of the layoffs. "It became kind of an emotional issue," he said.

That's evident from the minutes of a council meeting held in April. One member accused Nielsen, the city's largest employer, of "making a joke of the tax-incentive program," while another said the company "had abdicated [its] responsibility as a corporate citizen."

Despite the layoffs, the incentive deal "did everything it was intended to do," said Mike Meidel, director of Pinellas County Economic Development. Nielsen could have built its technology center somewhere else, Meidel said, adding that the company still has enough employees in Oldsmar to qualify for the tax breaks.

— Patrick Thibodeau

VIRTUALIZATION

VMware Replaces CEO Greene

VMware Inc. last week ousted CEO Diane Greene and replaced her with Paul Maritz, a former top executive at Microsoft Corp., which is posing a new challenge to VMware's dominance of the server virtualization market.

VMware also warned that its revenue will likely be "modestly below" expectations this year. But a spokesman for EMC Corp., the virtualization vendor's majority owner, said that Greene's departure wasn't prompted by any "single event or market dynamic."

Greene co-founded VMware in 1998 and had run it since then. But Gartner Inc. analyst Thomas Bittman said that with Microsoft now pushing its Hyper-V software, "it's going to be a very different market" for VMware.

– LUCAS MEARIAN, WITH THE IDG NEWS SERVICE

» VMware co-founder and former CEO Diane Greene

BRENDAN MCDERMID/REUTERS

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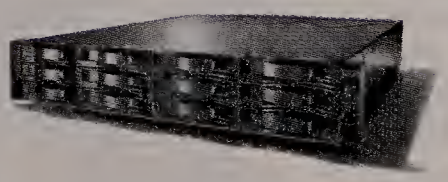

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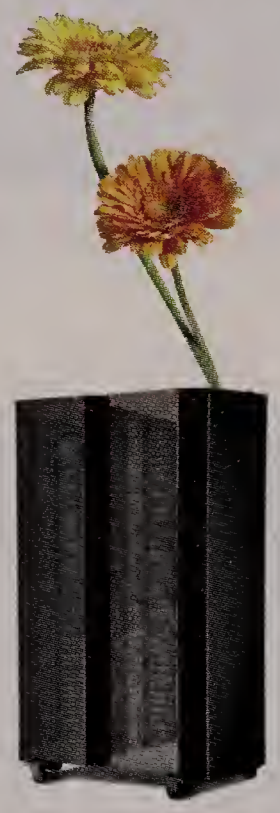
HARDWARE

EPA to Start Small on Energy Star for Servers



THE U.S. Environmental Protection Agency expects to introduce its first Energy Star rating for servers by year's end, though a more comprehensive system that measures the energy consumed by actual workloads will take longer to develop.

The Energy Star program is designed to make it easier for customers to compare the energy efficiency of different products. Ratings are available for more than 50 types of products, including desktop PCs, monitors, ceiling fans and even windows. But the server rating system has been difficult to develop.

"This server program is one of the most complicated we've tried to deal with," said Arthur Howard, an associate at ICF International Inc., a Fairfax, Va., firm that provides technical consulting to the EPA on the Energy Star initiative.

That's partly because servers are used for so many different workloads. Hardware makers say a benchmark test that measures energy efficiency on one type of workload, such as file serving, won't provide meaningful results to buyers looking to use systems for other applications, such as transaction processing.

After Congress pushed the EPA to promote the adoption of more energy-efficient servers in 2006, the agency quickly determined that it wouldn't be able to get server vendors to agree anytime soon on a way to measure the "useful work" a system can perform with a given amount of power, said Andrew Fanara, who heads the Energy Star product development team at the EPA.

The EPA hopes to use energy efficiency tests developed by Standard Performance Evaluation Corp., a nonprofit company that creates performance benchmarks for servers. Thus far, though, SPEC has published only one test suite, for measuring the energy consumed by servers running a Java-based application workload. The group hasn't said when it will add benchmarks for other types of workloads.

The EPA decided to sidestep the issue and come up with an initial "Tier 1" rating system for two key areas it thinks can be measured. One is the efficiency of a server's power supply, as measured at various load levels; the other is how much power a server consumes while it's idle.

But the EPA may have its work cut out for it, even on the Tier 1 spec. For example, Mark Monroe, director of sustainable computing at Sun Microsystems Inc., posed a question that has yet to be answered: "What's the definition of *idle*?"

— James Niccolai, IDG News Service

Short Takes

Apple Inc. began selling the **iPhone 3G** on Friday, but the launch wasn't glitch-free. In-store activations in the U.S. had to be suspended because users were having problems connecting to the iTunes 7.7 software needed to configure the device. And sales in London were temporarily delayed because of software-compatibility issues with the activation system of **Telefonica O2 UK Ltd.**, Apple's U.K. carrier partner.

Microsoft Corp. last Wednesday released a software update designed to fix a problem that blocks PCs running Office 2003 from getting patches via its **Windows Server Update Services** tool. But the next day, the company said it may have to revise the fix because of a pair of install and uninstall problems.

Microsoft also confirmed that attackers are actively exploiting an unpatched bug in **Word 2002**. But the company "is aware only of limited, targeted attacks that attempt to use this vulnerability," a spokesman said.

WEB 2.0

Backers Stage Protest on Obama's Social Network

IN A DEVELOPMENT that shows how users can take Web 2.0 sites in unexpected directions, a group of Barack Obama supporters is using his presidential campaign's official social network to protest the Illinois senator's stance on a bill extending the so-called warrantless wiretapping program.

The social networking group set up on the MyBarackObama.com site to urge Obama to vote against the extension of the Foreign Intelligence Surveillance Act (FISA) had attracted more than 24,000 member entries as of last Friday, although some of the entries appeared to be duplicates.

"It's now a truism," wrote TechPresident.com blogger Patrick Ruffini, "that when presented with an open platform, users will hack it to serve their purposes, not necessarily those of the sponsor."

In a blog post of his own, Obama acknowledged that he is "not exempt" from efforts by voters to join together and "hold their leaders accountable." Despite the online protest, though, Obama voted for the FISA bill when it was approved by the Senate last Wednesday.

– HEATHER HAVENSTEIN

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LEGAL ISSUES

IT Group Claims Former Official Used Pseudonym To Discredit It in Blogs

THE U.S. chapter of the IT Service Management Forum has filed a defamation lawsuit against its former executive director, alleging that he tried to discredit the group via blog comments posted under a fictitious female name.

The lawsuit follows an allegation made last year by someone using the name "Julie Linden, Ph.D." that an online board election held by the ITSMF USA in late 2006 had been compromised. The board hired Kroll Inc. to investigate the claim, and the consulting firm turned up evidence that some votes were recorded as being cast by people who said they didn't actually vote.

But the number of apparently illegitimate votes was too small to affect the outcome of the election, according to ITSMF officials.

Now the group, which promotes the use of standards such as the Information Technology Infrastructure Library, is claiming that "Julie Linden" and James Prunty, its former executive director, are one and the same. The lawsuit, filed last month in a California state court, seeks hundreds of thousands of dollars in damages from Prunty, who left the 8,000-member organization last year.

In the lawsuit, the ITSMF USA alleges that Prunty, making blog posts under the name Linden, disparaged the organization and suggested that people distance themselves from it. The legal filings don't suggest any motives for the attempts to discredit the group.

Prunty has yet to file a response to the lawsuit. He declined to comment on the allegations last week.

— Patrick Thibodeau

Earlier Developments

MAY 2007: The ITSMF USA notifies members of claims that an online board election in 2006 was compromised.
JULY 2007: The group's president says an outside investigation found "clear evidence" of a small number of fraudulent votes.
SEPTEMBER 2007: The same official says the voting fraud may have been an attempt to "embarrass and undermine" the ITSMF.

BETWEEN THE LINES *By John Klossner*

BENCHMARKS LAST WEEK

Yahoo Inc. released a beta version of an API that other companies can use to develop Yahoo-based search services for their Web sites. Rival Google Inc. already offers a similar capability.

One week after stopping most sales of Windows XP, **Microsoft Corp.** made its Service Pack 3 update available for automatic downloads via Windows Update.

SEVEN YEARS AGO: In a prime example of the dot-com bust's business failures, online grocer Webvan Group Inc. shut down and said it would file for Chapter 11 bankruptcy protection.

Global Dispatches

IT Thefts Stop Online Presses

LONDON – The *Financial Times* newspaper was temporarily unable to post stories or update content on its Web site last Thursday, following a theft of servers and other IT equipment from a hosting facility run by Cable & Wireless PLC.

The online shopping site of grocer J Sainsbury PLC was also affected by the theft at the facility in Watford, north of London. The thieves took servers, routers, switches and optical wiring, although police believe they were seeking scrap metal, not IT gear per se.

The theft forced the *Financial Times* to run its FT.com site from a backup facility in the U.S. Full functionality was restored by midafternoon on Thursday; Sainsbury's site was also restored that afternoon.

Cable & Wireless wouldn't say how the theft occurred.
Mike Simons, *Computerworld U.K.*

Yahoo Alerts EC To Google Deal

Yahoo Inc. has notified European antitrust regulators about the search-advertising deal it signed with Google Inc. last month, even though the agreement applies only to its Web sites in the U.S. and Canada.

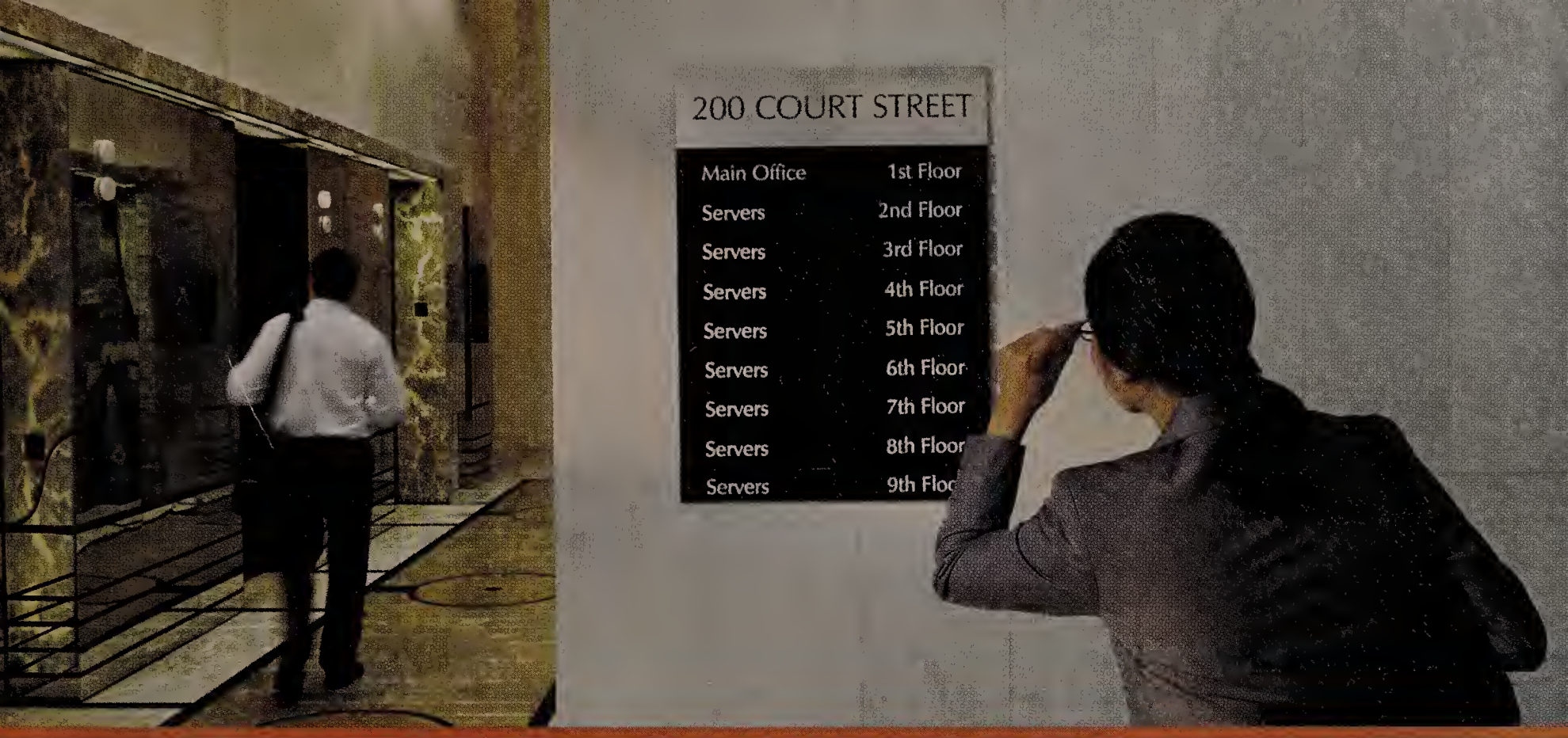
A Yahoo spokeswoman said via e-mail that the company decided to provide information about the deal to the European Commission out of a "spirit of cooperation," and to educate the EC on the agreement.

A spokesman for Google said it has also been in touch with the EC about the deal as a courtesy.

The U.S. Department of Justice has launched an investigation into the antitrust implications of the partnership.
Linda Rosencrance, *Computerworld*

BRIEFLY NOTED

British Airways PLC said that its high-tech baggage system isn't at fault for nearly a thousand pieces of luggage being delayed or misplaced daily at a Heathrow Airport terminal used exclusively by the airline. BA blamed other airlines for not delivering the bags of interconnecting passengers in time to load onto its planes.
Leo King, *Computerworld U.K.*



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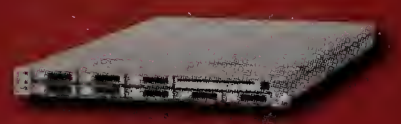

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GETTY IMAGES

DNS Hole Doesn't Go Unnoticed

A flaw in the DNS protocol didn't merit Microsoft's highest severity rating. But it's certainly getting a lot of attention. By Jaikumar Vijayan

A SOFTWARE PATCH released by Microsoft Corp. to plug a hole in the Domain Name System protocol was just one of nine security fixes the company issued last week. And like the others, the DNS patch got only an "important" severity rating, one step below Microsoft's top rating of "critical."

But that belies the amount of attention that the DNS vulnerability is attracting. The discovery of the cache-poisoning flaw earlier this year prompted a rare synchronized patching effort involving Microsoft, Cisco Systems Inc. and other vendors. And the disclosure of the vulnerability last week was accompanied by a chorus of calls for IT managers to patch or upgrade their DNS servers — pronto. (See "Fix DNS Now," page 48.)

For instance, Paul Mockapetris, who invented the DNS architecture for directing traffic on the Internet, said the time to act is now, before exploits of the flaw become widely available. "The clock is ticking," said Mockapetris, who is chairman and chief scientist at Nominum Inc. — a name server vendor that was among the companies issuing fixes for the flaw.

The urgency is being fueled by the fact that the vulnerability is a fundamental design flaw in the DNS protocol. In addition, Dan Kaminsky, the researcher at security services firm IOActive Inc. who found the cache-poisoning problem, plans to detail it at the Black Hat USA 2008 security conference next month.

David Jordan, chief information security officer for the Arlington County government in Virginia, wouldn't specify what measures the county took after learning of the DNS flaw from an alert issued by the U.S. Computer Emergency Readiness Team. But he said that patches deemed to be critical get treated as such by the county's IT staff.

"They go to the front of the queue," Jordan said, adding that the county "significantly" increases its network monitoring until such patches are put in place.

Kaminsky said that virtually every domain name server resolving IP addresses on the Internet is vulnerable to the DNS flaw, which could enable attackers to redirect Web traffic and e-mails to systems they control.

The US-CERT advisory listed more than 80 vendors whose products might be affected. A few have since reported that their software isn't vulnerable to the flaw, but companies such as Red Hat Inc. and Sun Microsystems Inc. joined Microsoft and Cisco in issuing fixes.

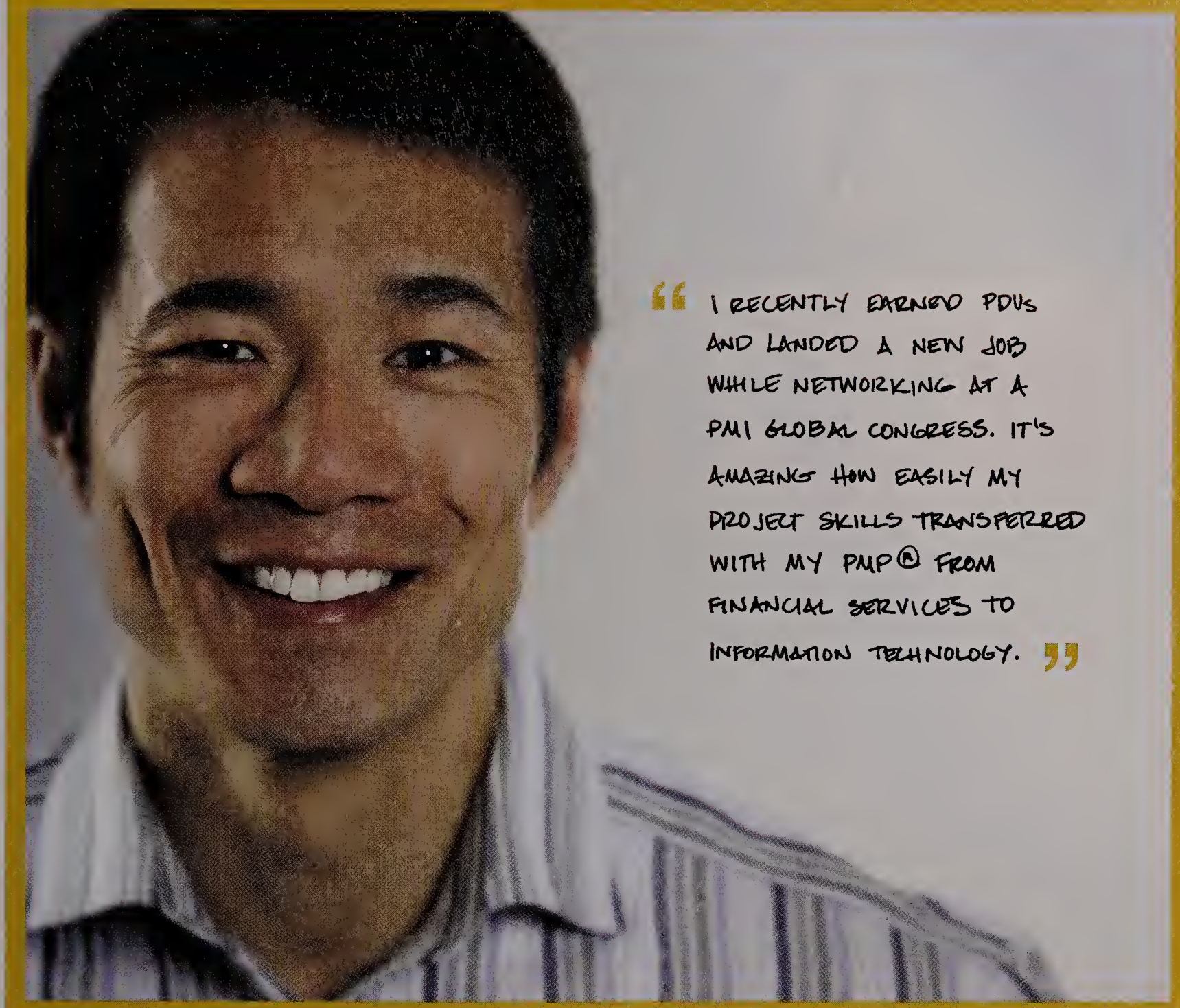
Both Red Hat and Sun distribute the Berkeley Internet Name Domain technology, a widely used DNS implementation developed by Internet Systems Consortium Inc. ISC released patches for several versions of BIND and urged users of older releases to upgrade their systems.

The type of flaw Kaminsky found isn't new; several other security researchers had previously discovered similar cache-poisoning vulnerabilities in the DNS, according to the US-CERT advisory. Attackers can exploit such flaws to determine the numerical identifiers randomly assigned to DNS packets; doing so gives them a chance to inject forged code and spoof DNS traffic.

But the new vulnerability Kaminsky found is so serious because it appears to offer a far more effective means of guessing packet identifiers than any flaws found earlier. "Someone using this technique can poison a caching server in about 10 to 20 minutes," Mockapetris said.

Joao Damas, a senior program manager at ISC, said the patches that vendors are issuing are designed to add more randomness to the process of assigning the identifiers to packets, in order to make it harder to guess the numbers. "Increasing forgery resilience is the way we are trying to do this," Damas said.

The patches are also being crafted to minimize the chances that attackers could reverse-engineer them, Kaminsky said. But he predicted that exploits of the flaw will still be developed. ■



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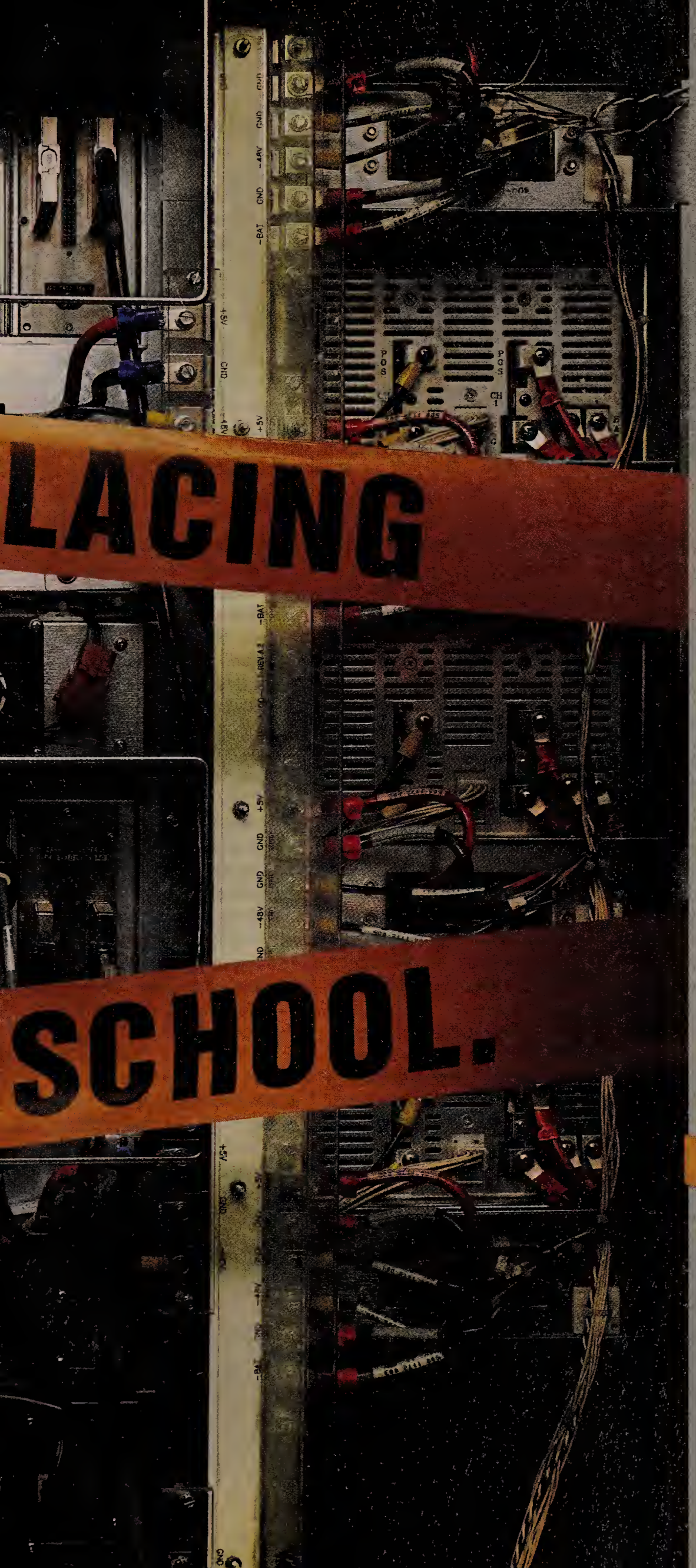

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Seven Years And Counting: National Disease-Tracking System Still Unfinished

A dozen states have yet to install technology needed to enable public health officials to monitor disease outbreaks via the Web. By Todd R. Weiss

YOU MIGHT think that in the event of a major epidemic across the U.S., public health officials at the federal, state and local levels could track the outbreak electronically, using real-time data to try to control the spread of the disease.

But you'd be wrong.

An effort to develop those capabilities has been under way since 2001 through the U.S. Centers for Disease Control and Prevention. The CDC is pushing the adoption of a Web-based system designed to give it and other health agencies nationwide rapid access to information about outbreaks of infectious diseases. Local and state health officials who are using the system can submit case reports to the CDC more quickly than they could before, and they are eventually supposed to be able to view data from other jurisdictions online.

Seven years after the CDC launched the initiative, though, the National Electronic Disease Surveillance System has yet to be completed. At this point, only 38 of the 50 states, plus the District of Columbia, are fully compliant with the technical requirements of NEDSS.

As a result, the data being input into the fledgling system is far from complete. And for now, information is flowing only in one direction — from local and state health agencies to the CDC. Until NEDSS is finished, state and local health officials can't go into the system and see what's happening across the nation, limiting their ability to monitor the spread of diseases.

The slow progress on NEDSS is forcing health agencies to continue relying on an existing system in which disease reports are manually entered into state-level databases and then transmitted to the CDC on a weekly basis.

For many health officials, the continuing inability to track outbreaks in real time is a source of both frustration and public-safety concerns.

"As a nation, we should be astounded that this capacity doesn't exist," said Dr. Scott McNabb, an epidemiologist who heads the NEDSS program in his job as director of the CDC's Division of Integrated Surveillance Systems and Services. "It should be a call for action."

McNabb described the capabilities of NEDSS as "absolutely mission-critical" for health officials. "With disease outbreaks, if local and state health departments are able to identify them quicker, then we are able to prevent future cases," he said. "But if we don't identify cases in a timely way, then people are at risk."

Efforts to get the 12 remaining states to finish their NEDSS compliance work are progressing, McNabb said, adding that he hopes to have all of them on board by next July. Six of the states have only one of the three criteria left to meet, while California, Connecticut and Utah have yet to comply with any of the requirements (see map, next page).

One of the major causes of the delays in completing NEDSS has been a shortage of federal funding for the project. The CDC has been receiving just $24.7 million annually for NEDSS, much of which the agency passes on to the states. A bill before Congress would provide $2.5 billion over five years to complete the system and pay for new hardware needed to make it more functional, but no action has been taken on that measure.

Also, even CDC officials acknowledge that NEDSS requires a major effort on the part of the states, partly because it involves more complex data than they had to work with in the past.

Before, infectious disease cases were reported individually and didn't automatically get grouped in a database. With NEDSS, states will combine their reports into integrated data repositories, giving users a fuller picture of what is happening regionally and nationally — but also imposing new data-management requirements.

"It is a giant difference, and a tremendous challenge, on the informatics side because it means you're now dealing in the relational database area, not just a flat file," McNabb said.

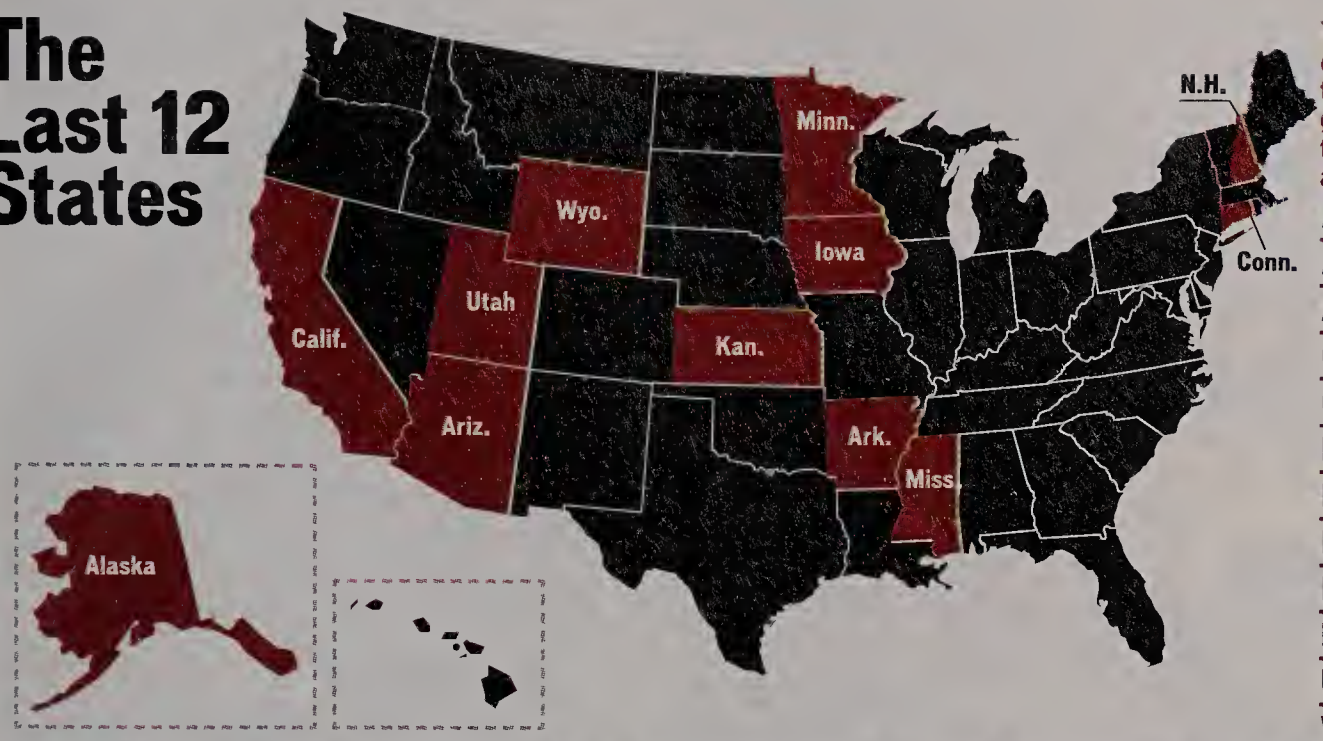
Another complicating factor is that there's no single technology that the states

NEDSS Compliance Status, by Number of States

Compliance Criteria	NOV. '04	NOV. '05	NOV. '06	NOV. '07
No. 1 Integrated data repository	17	23	36	44
No. 2 Electronic lab-result messaging	15	19	35	41
No. 3 Web-based software	21	28	37	44
States meeting Criteria 1, 2 and 3	15	19	30	38

SOURCE: NATIONAL CENTER FOR PUBLIC HEALTH INFORMATICS, CENTERS FOR DISEASE CONTROL AND PREVENTION

The Last 12 States



These states still need to achieve compliance with one or more of the three NEDSS criteria: an integrated data repository (IDR), electronic lab-result (ELR) messaging, and Web-based accessibility.

- **Alaska:** IDR and Web support
- **Arizona:** ELR
- **Arkansas:** ELR
- **California:** All three
- **Connecticut:** All three
- **Iowa:** ELR
- **Kansas:** ELR
- **Minnesota:** IDR and Web support
- **Mississippi:** IDR and Web support
- **New Hampshire:** ELR
- **Utah:** All three
- **Wyoming:** ELR

need to deploy. The CDC offers the free NEDSS Base System, which is built on top of Java and uses Red Hat Inc.'s JBoss application server software. But states can build their own applications or buy them from the handful of vendors that sell NEDSS-compliant products, as long as the software is browser-based and meets interoperability standards for data storage and messaging of electronic laboratory results.

Only 16 states are using the CDC-supplied system, which was developed for the agency by Computer Sciences Corp. and first became available in 2002. The low adoption rate is fine by McNabb, who said that forcing a monolithic system on the states wouldn't have worked. "Nobody would accept it," he noted. "We want it to be from the grass roots up, not the top down."

One promising development, according to McNabb, is that the Collaborative Software Initiative (CSI) in Portland, Ore., has created an open-source NEDSS application as part of a project that includes Utah's health and technology services departments. An open-source option could make it easier for states to collaborate on development of NEDSS software or enable them to modify the code to meet their needs, McNabb said.

MISSING CONNECTIONS

Dr. Robert Rolfs, state epidemiologist at the Utah Department of Health, said the agency began working with CSI last November after its original NEDSS software vendor went out of business. A deployment of the open-source technology is about half complete, Rolfs said, adding that NEDSS will replace a system that doesn't directly connect Utah's local public health offices to one another or to the state.

The problem with the existing setup is that disease reports may be received by either the state health department or county agencies, some of which may not even enter the information into a computer. "What we need is to connect the locals to the state to the CDC, so everybody is part of the same grid," Rolfs said.

Rolfs is among the health officials who have been frustrated with the slow pace of the national NEDSS rollout. But he said he understands that it's a large undertaking because of the involvement of all the states as well as the 2,000 or so local health agencies in the U.S. And once NEDSS is finally completed, he expects the benefits to be worth the effort.

Currently, "we find a way to get things done," Rolfs said. But, he added, NEDSS will enable public health officials to work more efficiently and to do things that aren't possible now.

Initially, NEDSS won't be used to monitor all infectious diseases. For example, the system will track cases of E. coli, salmonella, strep and tuberculosis that are reported to state and local health agencies, but it won't be used at first for reporting incidents of sexually transmitted diseases or HIV infections and cases of AIDS.

Long-term plans also call for NEDSS to be integrated with electronic medical records systems and other incident-tracking technologies, such as the U.S. Food and Drug Administration's food-safety monitoring applications. That would give NEDSS users broader data-analysis capabilities but would require many more steps, including the development of stringent data security and privacy protections for medical records.

For now, Dr. Marion Kainer, a medical epidemiologist at the Tennessee Department of Health, which has been using the CDC's NEDSS software since April 2004, is looking forward to simply being able to use the system to access disease information from other states.

"But it takes a lot of resources to get there," Kainer cautioned. In addition to more money, what's needed to speed up the transition to NEDSS, she said, are workers who are trained in both public health informatics and IT, so they can tell IT departments exactly what is required.

Kainer added that she isn't fazed by the fact that the 50 states are using a range of software to connect to NEDSS. Although that complicates things a bit, "if everybody adheres to standards, we can get there," she said. "If everybody just goes and develops their own vocabulary, we'll be where we are for a long, long time."

On the Mark

HOT TRENDS ■ NEW PRODUCT NEWS ■ INDUSTRY BUZZ BY MARK HALL

MATTHEW FAULKNER

End IT's Data Deficit

IT'S HARD TO IMAGINE a data deficit in the CIO's office, given the reams of reports spewing out of IT. But Ray Homan argues that there is one.

Homan is the CEO of BDNA Corp. in Mountain View, Calif., which supplies — you guessed it — more information to IT. But this might be just the data you've been missing.

BDNA's Insight software discovers assets on your network and can tell you interesting tidbits — for example, the date when a vendor plans to cease supporting a critical application's underlying operating system, or which systems encrypt data at rest.

What's more, Homan claims, after the software classifies what it finds through its "fingerprint library" of IT system data, you can group assets according to your needs. That is, systems can be gathered by department, division, project or vendor, or you can mix and match. So, you could create a grouping to track test servers in your engineering division that are slated to be virtualized.

A data shortage in IT? You bet, claims Homan.

Available now, Insight Version 5 lets you follow a project over time. It's also available as a service, starting at around $100,000 per year.

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Alex Neihaus, vice president of marketing, says ActiveVOS (for Visual Orchestration System) adheres strictly to Web services standards, such as Business Process Execution Language (BPEL) and Business Process Modeling Notation (BPMN). Business analysts can use their own BPMN standard approach to visualize a process, then send it to IT for coding, where it appears in the BPEL format standard. After the coder makes changes in his BPEL view, the business side gets a BPMN view once again.

According to product manager Mike Moniz, ActiveVOS is 100% compliant with the BPEL 1.1 and 2.0 standards and runs on almost any app server. He says the BPMN module gives business analysts everything they need to model a business process, from data flows and swim lanes to key performance indicators.

ActiveVOS 5.5 will include support for complex event processing when it ships in mid-August. Pricing starts at $10,000 for a production server and $4,000 for a development package.

Bye-bye, i

IBM once sold something called the System/38, which begat the AS/400, which led to the iSeries, which became System i, which shrank to i5. Now the company offers you a single, pathetic vowel, the i. The IBM i.

25%+
Percentage of legacy-savvy baby boomers who will retire by 2011, says Gartner Inc.

Letters aren't all the i is losing. David Leichner, chief marketing officer at BluePhoenix Solutions in Cary, N.C., says the legacy technology is losing market share, even among supporters. A survey last month of the membership of Common, the largest user group for i technology, showed that a mere 23% planned to move to the latest Power Systems hardware to run the i OS.

Leichner says the most active part of his company's legacy-migration business is moving old RPG-based i stuff to .Net or Java just because it's too risky to keep alive.

The risk comes from the retirement of baby boomers, the only ones who understand the poorly documented code, Leichner claims, and who know how to patch the packaged software that probably was the reason you bought the IBM gear in the first place.

Leichner acknowledges that legacy migrations are neither fun nor cheap. "No CIO will do it unless they have to," he acknowledges.

But he's betting you'll have to. Demographics are on his side. ■

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Dossier

Name: W. Wade Vann

Title: Senior vice president and CIO

Organization: Simmons Bedding Co.

Location: Atlanta

Favorite food: Blackened chicken

Wheels: A black 2004 Toyota Sequoia SUV

Hobbies: Golf, scuba diving, skydiving, backpacking, hang gliding, rock climbing and race car driving

Favorite vacation destination: Kiawah Island, S.C.

People would be surprised to learn . . . "That I married my high school sweetheart and that we just celebrated our 35th wedding anniversary."

Last book read: ***It's Not What You Say . . . It's What You Do***, by Laurence Haughton

■ THE GRILL

W. Wade Vann

The **Simmons Bedding CIO** talks about **'plain vanilla' systems, standardization** and **just-in-time IT.**

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Is there a lot to keep track of for a bedding company? We have all the financials — accounts payable, general ledger, accounts receivable, fixed assets.

Continued on page 24

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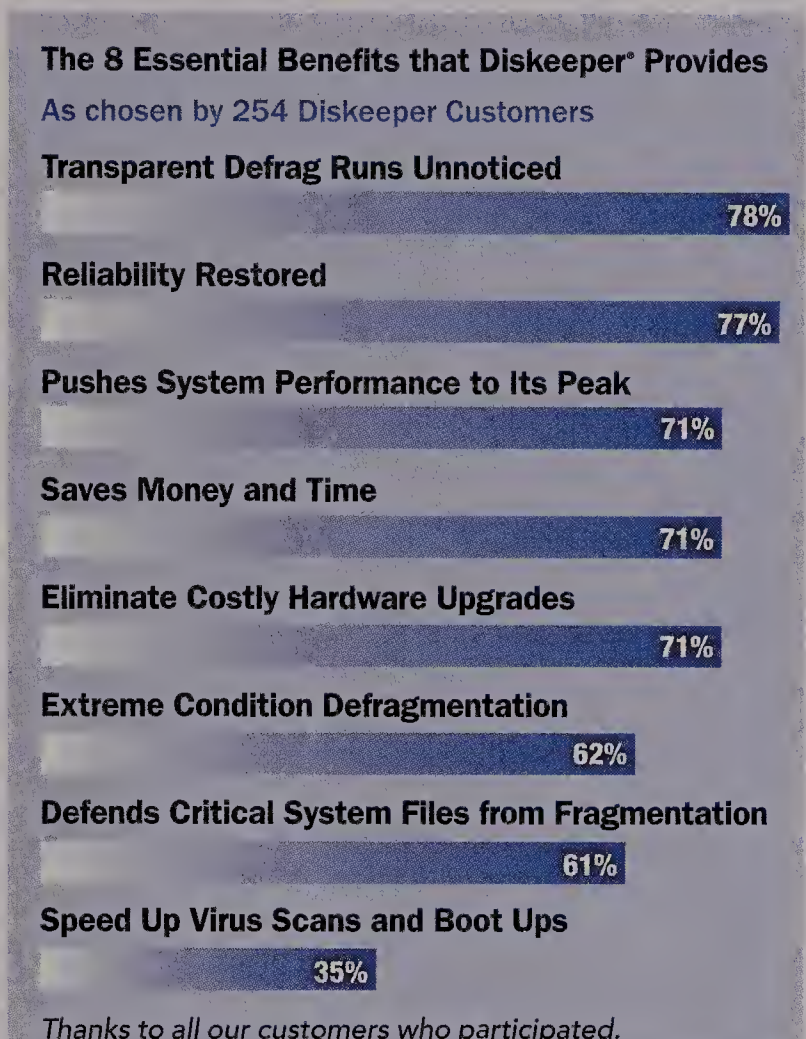

1. PUSHES SYSTEM PERFORMANCE TO ITS PEAK

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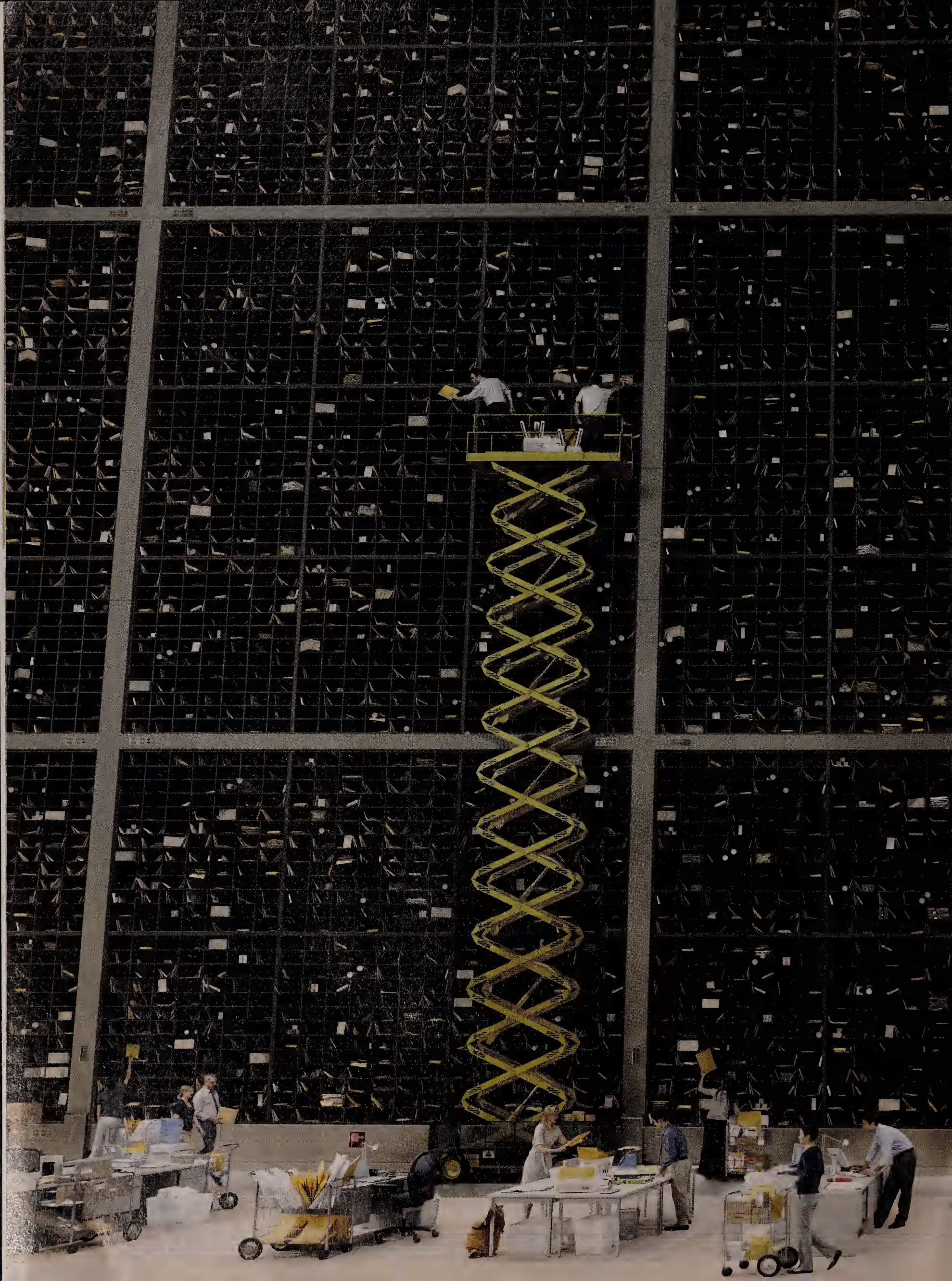

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Continued from page 20

Then, on the manufacturing side, we have order processing systems, manufacturing scheduling systems, transportation scheduling systems. Then, down on the shop floor, we have production-tracking and time-and-attendance systems. It’s all centralized in one data center, which is outsourced in Omaha, Neb., to reduce our costs. The IT department is at the company’s corporate offices in Atlanta and is staffed by about 52 IT people.

What are IT’s main responsibilities at Simmons? IT’s job is to understand the needs of the business and ensure the appropriate technology is in place to support the business needs. This includes transaction processing systems, business intelligence systems and all infrastructure required to support their needs.

Your strategy is to minimize the number of applications your IT staff has to support for your users. How do you do that? It’s really trying to have a very clear direction of where you want to go. In today’s world, software vendors not only sell to the CIOs, but they also sell to every vice president in a company. So it’s not uncommon for a VP of sales [or] manufacturing to call you and say, “Guess what — I’ve got this piece of software I want to buy, and here’s what it’s going to do for us.”

As CIOs, we need to make sure that we develop the relationships with our peers so that when the software vendors call, before [the VPs] even look under the hood or take a test drive, they call the CIO and say, “We’ve got this problem, and this software vendor just called and I think it may be a good solution. What do you think?”

So we can partner with the business and make sure that, No. 1, this is a priority, and it fits within the long list of things that the business wants to do, and No. 2, it’s a good fit for our strategic direction.

You have described the applications being used at Simmons as “plain vanilla.” Can everything you need to do really be done with essentially off-the-shelf software? Let’s make sure you’re not misunderstanding me. For J.D. Edwards, our ERP system, we have customized the software. We went through a detailed review of all the functional requirements, and we have had to make some changes to the software, more so than we even wanted to. But we have reduced those needed changes by at least 65% [since] 1995. And that’s driven by two things: 1) The functionality of the new software has improved, and 2) the business has gotten smarter and we’ve realized that we need to minimize the customization. It just adds to the ongoing costs.

One of the reasons you buy software is that the software companies can get enhancements for all the different industries and they’ll make those available to you. So you want to be able to bring in those enhancements as frequently as the business will allow. And if you’ve customized it, you’re not going to do it very often, because you’ve got to reapply all those changes.

So you use a narrow range of applications at Simmons to conduct your business? Yes. We have J.D. Edwards for ERP; we have PeopleSoft HR and Payroll. We use Hyperion for business intelligence. For document imaging, we use Stellent, and there are 10 or 15 other applications — one-offs for different departments that fit in with our strategy but that don’t affect the whole company.

We’re a Windows shop, with the same version [on] every one of about 1,100 PCs. All the servers are configured the same. We use the same Cisco networking equipment at all plants, as well as Avaya telecommunications equipment at all of our locations.

Standardization is the key to everything that we’ve done here. The IT department supports about 3,500 workers. A lot of the factory people don’t have PCs, but they still use reports and clock into the system. All their production is tracked using a standard system.

We have a time and attendance system that each employee actually punches into at their workstation, and then, as they’re producing, we track which piece they’re producing so we can keep track of each individual’s productivity in a real-time environment.

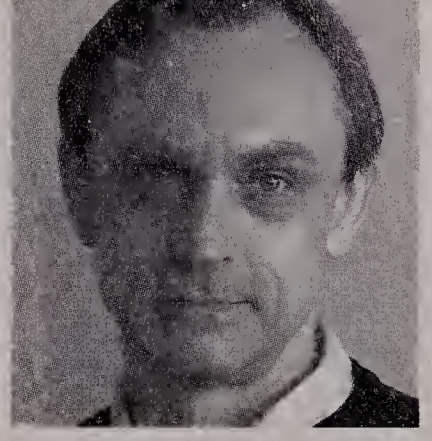
How does the just-in-time nature of your business affect IT? Everything is just in time. The raw materials come in just in time, our trailers are shipped just in time, the manufacturing process has to happen exactly as scheduled to meet the delivery window. So the system has to run very smoothly all the time.

If you go into a retail store and you buy a bed on Monday, we receive the order Tuesday morning, and we’re ordering the raw materials for that bed that day. The bed will be made that day or the next day and will be shipped to the retailer on Thursday and probably be delivered to your home on Friday. We had not purchased any of those raw materials until today.

— *Interview by* **Todd R. Weiss**

Michael H. Hugos

How Agile Analysts Get Things Done



HERE'S A SITUATION to ponder. Let's say one of your company's divisions has hit on a great new business model that's impressing even the accountants. Headquarters decides this business needs to be scaled up and rolled out nationally — fast.

What's of interest to you is that headquarters thinks the systems developed by the division's IT group are vital to making this new business successful. You need to find out how this business operates, what those systems do and how the whole thing can scale up for national rollout.

But when a new business is taking off, the people involved don't have a lot of time to sit around talking about it. In fact, they say they can give you only a few days in person, after which they will review the documentation you send them and do some phone calls.

This is a job for an agile analyst. Here's what I'd do.

Time is tight, so I'd focus only on the most important stuff. And the first day would be devoted to finding out what that is. I would interview business unit managers about strategy and about who their customers are, what customers like, how the business finds new customers, how it prices products and services, and what the profit margins are. These would be short, one-on-one meetings, because managers are less likely to speak their minds in a group. Questions would have to be pointed and probing.

The next couple of days would be spent meeting with groups of people in different operations areas: customer service, purchasing, production scheduling and finance. My goal would be to get detailed workflow and task descriptions, so these meetings would be longer and involve groups, since I would want to make sure everyone was in agreement.

In each of these meetings, I would stand in front of the group and draw the process flows on flip-chart paper as people told me about them. It's a good way to keep people focused and to control the pace of conversation. Better yet, you finish meetings with all the operations captured in process diagrams and with notes that have been vetted by the people involved.

After little more than a week, I'd be ready to present my findings.

After that, I'd spend time with salespeople. They're always closest to the action. I'd ask them what benefits this new business model would provide customers. I'd also accompany the salespeople as they called on customers and prospects, giving me a chance to see whether the customers perceived the same benefits.

After little more than a week on the ground, I'd be ready to present my findings, which I'd deliver to the division's business people in three short documents: process flow diagrams that cover all operating areas, a logical data model of the data handled in these process flows, and a storyboard of screens to illustrate how people use systems to manage the data and perform the tasks in the process flows. I'd schedule phone calls for reviews and corrections. Since such documents are graphic and easy to understand, even the busiest people would be willing to take the time to look at them.

I'd ask for two other documents from the division's IT people: technical architecture diagrams of their systems, and schemas of the system databases. If those documents were complete and up to date, the systems might scale up to handle a national rollout. If they weren't, it would suggest that there were problems, and I would not recommend using their systems for national rollout.

But at this point, I would have already done the footwork necessary to get going on the systems we would need. It would all be in the three documents delivered to the business people.

That's how agile analysts get things done and deliver value in a fast-paced world. ■

Michael H. Hugos *is a principal at the Center for Systems Innovation and a speaker. A member of the 2006* Computerworld *Premier 100 IT Leader class, his newest book, coming this fall, is* Sustainable Prosperity: Business Agility and Moving Beyond the Boom-to-Bust Cycle *(John Wiley). He can be reached at* www.MichaelHugos.com.

E-MEDICAL RECORDS: WHAT SEEMS TO BE THE

PROBLEM?

COVER STORY

THERE ARE LOTS OF CHALLENGES, BUT FINANCIAL DISINCENTIVES MAY BE THE BIGGEST. BY ROBERT L. MITCHELL

IT'S BEEN ABOUT THREE YEARS since San Diego's five major hospitals first convened to discuss sharing electronic medical record data in an effort to improve diagnoses, reduce errors and improve the quality of patient care. The group held several meetings and entered discussions with a vendor as a possible corporate sponsor — and that was that.

"It really didn't go anywhere," says Dr. Joshua Lee, medical director of information services at the University of California, San Diego, Medical Center, one of the participants in the EMR discussion. While the system would have had a clear public health benefit, it was not in each hospital's economic self-interest to pursue it. "The financial and oversight responsibility would fall on the medical centers, even though it's a very intangible benefit to the medical centers," says Lee.

Today, if a child who is a UCSD patient at the pediatric clinic at 7910 Frost St. in San Diego is admitted to the emergency room at Sharp Memorial Hospital at 7901 Frost St., the only way the ER doctor can view that child's known medical problems, allergies, prescriptions and other health data is by calling UCSD HealthCare, making a records request, and waiting for the information to be printed and either faxed or physically delivered on paper. Conversely, any treatments or medications given at Sharp

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WHAT'S IN A RECORD?

Electronic medical record (EMR): An electronic record of health-related information on an individual that can be created, gathered, managed and consulted by authorized clinicians and staffers within one health care organization.

Electronic health record (EHR): An electronic record of health-related information on an individual that conforms to nationally recognized interoperability standards and that can be created, managed and consulted by authorized clinicians and staff across more than one health care organization.

Personal health record (PHR): An electronic record of health-related information on an individual that conforms to nationally recognized interoperability standards and that can be drawn from multiple sources while being managed, shared and controlled by the individual.

SOURCE: NATIONAL ALLIANCE FOR HEALTH INFORMATION TECHNOLOGY (WWW.NAHIT.ORG)

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_INFRASTRUCTURE LOG

_DAY 54: This gap between LOB and IT is getting out of hand. Our business processes are rigid and inflexible. We can't react to changes in the business environment. We've got to find a way to bridge the chasm.

_Gil's gonna jump it. I think he needs a bigger engine.

_DAY 55: I'm closing the gap with a Smart SOA™ approach from IBM. They offer a full range of software, hardware and services to accelerate the alignment of our business and IT. Their track record is impressive. They've proven themselves at all stages of SOA adoption, with over 6,550 engagements. Now we'll have the agility to respond faster to change.

_Gil didn't clear the chasm. He says from now on, he's not jumping metaphors.

WebSphere®

Watch the Smart SOA demo at:
IBM.COM/**TAKEBACKCONTROL**/SOA

PERSONAL E-HEALTH RECORDS MAY GIVE AUTOMATION A PUSH

Microsoft, Google and Dossia are all developing Web sites where individuals can aggregate personal health records from a variety of sources. The data in a PHR can be formatted to fit onto a USB drive or DVD-ROM that the user can easily carry. In an emergency, a PHR could provide a doctor with basic information about a patient, such as his allergies or prescriptions. But doctors say it is no substitute for a more detailed, institutional electronic health record.

Providers may "dumb down" summary data for a PHR, and users can add or delete information. "That may shoot it down with physicians," says John Quinn, chief technology officer at standards group HL7.

Dossia will release its PHR to 7 million employees of Wal-Mart Stores Inc. and several other founding companies this year; Microsoft's Health Vault is already online.

But will people use them? John Halamka, CIO at Harvard Medical School and Beth Israel Deaconess Medical Center in Boston, thinks that about 20% of users will find creating a PHR to be worthwhile. And those early adopters may start demanding that providers maintain health care records in electronic form. "Some good use cases will start forcing labs, clinics and hospitals to start producing clinical summaries in the national format," Halamka says. In that way, PHRs could prompt providers to finally get their own, internal electronic records systems in order.

– ROBERT L. MITCHELL

Continued from page 27

won't be entered into the patient's EMR in the UCSD system. "It's not like we don't share on paper, but we don't institutionally share data," says Lee.

The situation in San Diego is the norm rather than the exception, but it doesn't have to be that way. "We have had the technology to do this for 30 years," says Shaun Grannis, medical informatics researcher at the Regenstrief Institute, an Indianapolis-based research organization that spearheaded a metropolitan health information exchange in its home city. One of the first U.S. regional exchanges, the Indianapolis system is used by 34 health care providers.

Rather than requiring member providers to change their internal systems, the institute wrote middleware that integrates data from all of those proprietary systems and organizes it into a single data model. "We wrote the interface engines that do all of this stuff," says Grannis. If members simply want to view integrated patient data, they log into the community electronic health record (EHR) Web site. Alternately, the institute can push data out to providers that have their own EMR systems.

Ultimately, technology isn't the problem. Granted, the health care industry has been held back by loose and overlapping technical standards and by poor interoperability among the different types of health information systems sold by hundreds of vendors. But the biggest obstacle may be a payment model that offers little financial incentive for most health care providers to invest in using electronic records internally, let alone share them with other providers.

> **"We have had the technology to do this for 30 years.**
>
> **SHAUN GRANNIS,** MEDICAL INFORMATICS RESEARCHER, THE REGENSTRIEF INSTITUTE

Electronic records systems do yield some savings, particularly in the area of filing, but the savings often aren't enough to justify the cost — especially for single-physician and small group practices, which make up more than half of the health care services in the U.S.

Even in Indianapolis, there is no viable long-term business model for the health information exchange, and not all members have their own EMR systems. "We are largely grant-funded," Grannis says. Once those grants come to an end, other revenue sources must be found to sustain the programs.

THE BUSINESS PROBLEM

Just getting health care providers to migrate from paper to electronic records systems is a challenge.

"The provider bears the cost, but most of the benefits accrue to other parties," mainly "payers" — insurance companies — and patients who reap the benefits of higher-quality care, says John Halamka, CIO at Harvard Medical School and Beth Israel Deaconess Medical Center in Boston and a *Computerworld* columnist.

Among the benefits for patients is prevention of adverse reactions to drugs. But while providers recognize the benefits, they aren't rewarded for improved patient care and safety, says John Quinn, chief technology officer at Health Level Seven Inc. (HL7), a health data standards development organization in Ann Arbor, Mich.

A recent study on the value of computerized order-entry systems for clinical use found that only 11% of the return on that investment goes to the provider. Most of the rest benefits the payer, says study co-author Blackford Middleton, who is corporate director of clinical informatics research and development, and chairman of the Center for IT Leadership at Partners HealthCare System Inc. in Boston.

"We're not reimbursed for using better systems to take better care of patients, says Mark Leavitt, chairman of the Certification Commission for Healthcare Information Technology. Ironically, the financial systems are a different matter. "Everyone makes darn sure those work, because if you don't send [insurance reimbursement information] in the right format, you don't get paid," he says.

Historically, the adoption of computers in health care has been driven by the need to bill for services. That hasn't changed, Leavitt says.

The same problem arises with regional health information exchanges, such as the one briefly considered in San Diego. "If I send electronic information to Sharp [Memorial Hospital], I don't really benefit. It costs money to do

this, and it doesn't really help our margin," says Lee. "It's good for patients, but it's almost an unfunded mandate."

On the other hand, says Leavitt, "if you're not able to cover the last mile and get that record to the other institution, it won't affect your reimbursement at all."

Shared EHRs can help providers avoid duplicating tests. But providers are compensated for procedures given, not those avoided. "The cost to the payer is diminished, but so is the reimbursement to the radiology department and the radiologist," says HL7 CEO Charles Jaffe.

"The problem we have in this country is a lack of business reasons for integrating," Jaffe explains. "What is the business case for two competing hospitals to share data? None."

On a national level, the inability to exchange health information has public health consequences. About 47 million Americans move every year, but for the vast majority, medical records — even electronic ones — don't follow the patients. That can affect continuity of care.

"Nirvana is when in every transition of care, a clinical summary will be pushed to the next caregiver," says Halamka. Today, that information is still printed and forwarded on paper. If the patient is lucky, his new provider may scan the paper records into its own system, where they will be available as viewable but nonsearchable image files.

Robert Smith is associate chief of staff for health care analysis at the Veterans Administration San Diego Health Care System, which also participated in the regional exchange discussions. He thinks that the advantages in quality of health care and patient safety are "worth every cent."

The VA has developed its own EMR system and can share patient data with any VA hospital in the country, as well as with some U.S. Department of Defense medical facilities. But VA San Diego can't exchange data with non-VA health care providers that its patients use.

The Duke University Health System has integrated the data from its disparate systems to create a unified EMR system. CIO Asif Ahmad says the benefits have been worth the considerable effort involved. The hospital is using business intelligence tools to comb through clinical data in an effort to improve the quality of patient care and is using predictive analytics to help avoid potentially adverse reactions to drugs and improve patient safety. But it is not yet sharing health care record data outside of its own provider network.

SHOW ME THE MONEY

The lack of consistent standards and the plethora of proprietary vendor offerings contribute to the problem, but those issues are slowly being resolved. Improving interoperability will make building an EMR infrastructure and EHR exchanges easier and cheaper, but it won't solve the incentive problem.

First, there are the upfront costs for getting all practices on EMR systems. Leavitt says the typical cost of such a system ranges from $15,000 to $50,000 per doctor. "Smaller practices can't amortize it," he says.

"Doctors are not going to do this on their own," says Halamka. "Hospitals have to pay for them to acquire it, and payers have to provide incentives for them to use it."

He says thanks to a 2004 reinterpretation of the Stark Law — federal legislation that prohibits doctors from receiving subsidies from institutions to which they refer patients — hospitals can subsidize up to 85% of nonhardware implementation costs for private practices. By using a software-as-a-service model for delivering EHR systems, those practices can reduce upfront hardware costs. "Software as a service is cheaper because of economies of scale achieved through central hosting and procurement," Halamka says.

But although Beth Israel Deaconess has made it a policy to offer EHRs to nonemployee doctors, many hospitals, faced with tight budgets, are unlikely to fund such programs without an eco-

Continued on page 34

"Doctors are not going to do this on their own. Hospitals have to pay for them to acquire it, and payers have to provide incentives for them to use it."

JOHN HALAMKA, CIO, HARVARD MEDICAL SCHOOL AND BETH ISRAEL DEACONESS MEDICAL CENTER

DOCTORS PUSH BACK

Cost isn't the only reason why doctors may object to using electronic medical records systems.

Most commercial products in use today weren't built by clinicians, and some have faced doctor pushback. "Top-down efforts to create electronic health records often run into resistance" – and even open rebellion among doctors, says Robert Smith, associate chief of staff for health care analysis at the Veterans Administration San Diego Health Care System.

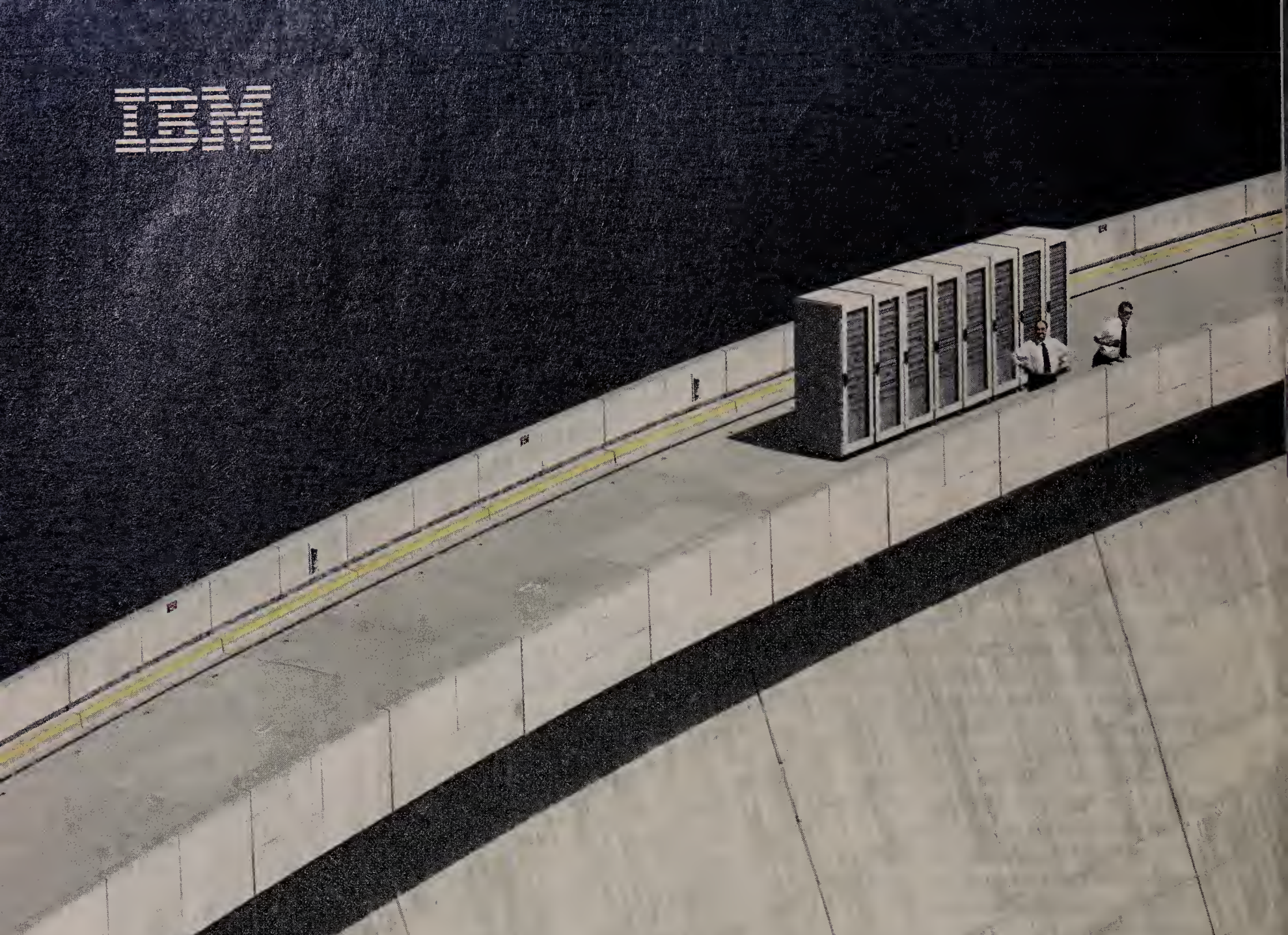
Shaun Grannis, medical informatics researcher at the Regenstrief Institute, says the user interfaces in commercial products often lack flexibility and don't always present information the way doctors need to see it.

"In my electronic medical records system, it takes seven mouse clicks to place a prescription for my patients. That's too many," he says.

Grannis also would like to be able to view and change a patient's medications and diagnoses from the same screen, but the systems aren't flexible enough to allow that. He'd like to see a fully customizable, widget-style user interface like iGoogle's so a doctor could arrange different health information widgets and resize and reorder them on the same screen. "I'd like to decide how I'm going to interface with the system, not the other way around," he says.

Smith agrees that it may be less efficient to "mouse around" on electronic forms than it is to use paper. But if physicians can get over that, efficiencies in decision support and structured reviews of information such as lab and radiology results make electronic record systems worthwhile. The key, he says, is to tailor the systems to the physicians' needs.

– ROBERT L. MITCHELL



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_INFRASTRUCTURE LOG

_DAY 41: Our processing needs and energy bills keep growing! We spend the bulk of our budget just powering and cooling our machines. Gil says he knows where we can generate more power.

_He moved the data center to the top of a dam. Note to self: don't drop pen.

_DAY 44: I'm taking back control of our energy issues with IBM. Their services helped us design a data center that sips energy. Now we're running on fewer, more energy-efficient IBM Systems to drive utilization up and costs down. And IBM Systems Director Active Energy Manager™ and IBM Tivoli software can help us monitor usage and manage costs. It's all part of their approach to the new enterprise data center.

_Good thing — I'm not that into dams. I'm more of a fjord guy.

Tivoli.

Find out how energy efficient your company is at:
IBM.COM/**TAKEBACKCONTROL**/EFFICIENT

HEALTH INFORMATION EXCHANGES

A national electronic health record exchange is far from a reality, but a few local health care exchanges have emerged in the U.S. These allow member provider organizations to share electronic health record data, giving physicians a unified view of a patient's medical history.

The Massachusetts Health Data Consortium has organized a regional health information sharing initiative called MA-SHARE (for "Simplifying Health Care Among Regional Entities"). MA-SHARE has created two exchanges. The first was an e-prescribing gateway between two Boston-area hospitals. The second enables several providers to share patient discharge and emergency room summaries. The cost savings from eliminating paper handling, storage and routing have been enough for member hospitals to consider funding the project on an ongoing basis, says John Halamka, CEO of MA-SHARE.

The key to success has been grant funding and contributions from large health care organizations. Such local information-exchange efforts may ultimately succeed, but a national health information exchange can't be funded by local stakeholders, Halamka says.

The Regenstrief Institute's electronic medical records system aggregates data on 6 million patients from 34 providers and allows a doctor to view all data for a given patient in a single, virtual record. Rather than forcing each provider to change its data format, the institute provides the middleware to convert everything into a common format.

The Regenstrief Institute contributes $2.8 million of the annual $19.5 million budget; the balance is largely funded by federal grants, although some funding comes from local health care institutions. The organization has also procured ongoing funding for related services. For example, the exchange creates a repository of health data that the institute has mined to create a system for alerting public health officials to disease outbreaks.

But getting health care providers to lay their dollars on the line has been a tough sell, says medical informatics researcher Shaun Grannis. "They're just beginning to understand the value of a system like this," he says.

– ROBERT L. MITCHELL

Continued from page 31

nomic incentive to do so.

There are secondary costs as well. Staffers must learn a new EMR system and often must change their business practices to accommodate the way it works. In some cases, the implementation of a system can take four to six months and cut back the number of patient visits by as much as 50%, says Grannis. "That's a big barrier to face. And they're not computer scientists, so it's a strange new world," he says. While practices do see some savings by reducing costs in areas such as filing, "none of these value propositions are home runs," says Grannis.

HL7's Jaffe says that if the market isn't providing incentives to doctors to make the transition, the government should do so in order to improve public heath. "In the U.S., [the government] has budgeted $75 million for health care IT. In England, it's £1 billion. It's disheartening," he says.

The U.S. Department of Health and Human Services does have one small program under way. In what project officer Jodi Blatt calls a "pay for performance demonstration," the Centers for Medicare & Medicaid Services are in the process of recruiting 2,400 practices in 12 locations this year to participate in a study. Physicians can earn up to $58,000 — group practices up to $290,000 — in incentives over the course of the five-year program by demonstrating improvements in patient care as a result of having implemented EMR systems. "We believe the incentives are substantial enough to reduce the barriers to practices," she says.

However, there are 921,904 physicians, 723,118 practices and 5,756 hospitals in the U.S., according to the American Medical Association and the American Hospital Association. Given those numbers, it's not clear that the incentive program will enable the industry to meet President Bush's stated goal that it provide most Americans with interoperable EHRs by 2014.

BROKERED SOLUTION

If all hospitals and physicians used EMR systems and met the standards for interoperability, more regional exchanges — and even national information exchanges — could start to develop. "A hospital in Miami could contact a hospital in San Diego and do some sort of exchange. That's in the ideal world," says Blatt.

But who will pay for that remains unresolved. Grannis says Regenstrief is working to find a sustainable economic model for health information exchanges by providing value-added services beyond basic health-record sharing. For example, the institute has received separate, ongoing funding for a service that uses data in the EHR exchange to quickly identify disease outbreaks (see story, page 16). But today, Grannis acknowledges, the exchange still depends on "a patchwork of funding."

He says he thinks that efforts by Microsoft Corp., Google Inc. and others to build personal health record repositories — Web-based services where individuals can aggregate health records from multiple providers and add their own data — will put pressure on the industry to embrace EMRs. But it will be too complicated and costly for providers to establish bidirectional transfers with every other provider. Exchanges such as the one in Indianapolis will be required, and to assuage competitive concerns, neutral third parties will need to step in to manage those exchanges, Grannis says.

That's the tack taken with the nonprofit Massachusetts Health Data Consortium's MA-SHARE program. It enables the exchange of clinical document summaries and e-prescribing data among 17 hospitals, using Web services protocols. But even in Massachusetts, with its many advanced teaching hospitals, 50% of doctors still don't use EMRs, and Halamka's nirvana of consolidated EHRs that follow the patient remains a distant vision. ■

Quality Over Quantity

This drug firm's approach to application support uses more service-level metrics and fewer vendors. By Mary K. Pratt

2008 BEST IN CLASS

This story is part of an ongoing series showcasing the best projects of this year's Premier 100 IT Leaders.

Johnson & Johnson

Johnson & Johnson Pharmaceutical Research & Development LLC in Raritan, N.J., performs R&D work for the pharmaceutical business units of Johnson & Johnson worldwide.

IT CHAMPION: Rick Franckowiak, director of the technology office

IT STAFF: 120 employees in the R&D unit; the technology office organization has 30 internal employees, four of whom are dedicated to applications support and software maintenance.

PROJECT PAYBACK: The company won't disclose the project costs but cites a 30% reduction in application support costs. It had saved $1.75 million as of 2006, with an additional 5% reduction in costs expected in 2007, 2008 and 2009. ROI also includes an increase in service-level performance to 94%, 14 percentage points higher than in 2004.

RICK FRANCKOWIAK and his staff were facing rising costs for application-support services that, despite the burgeoning price tag, could have been better. So the team took action.

Franckowiak, director of the technology office at Johnson & Johnson Pharmaceutical Research & Development LLC (J&JPRD), led an application support project that brought a strategic shift in how services are delivered, trimming the number of vendors while also increasing the quality of services and cutting costs.

"Making a switch from a head count to service-level approach was a major change, both culturally and in terms of process. But now, service levels are up, and costs are down significantly," Franckowiak says.

Management of product support services is becoming increasing complex, important and costly, says Bob Igou, an analyst at Gartner Inc. "IT organizations are highly challenged to free up some money to do the new stuff that the lines of business want and still keep last year's stuff running and up-to-date," he says.

Therefore, companies are trying to improve the management of their support services to rein in costs and improve customer satisfaction. "They're paying big bucks to get software support, and they're engaging with their vendors and saying, 'What are we getting for this money?' " Igou says.

When J&JPRD started the application-support project, Franckowiak's technology office oversaw a portfolio of more than 90 business applications. The company had five major vendors providing support, with contracts focused on the number of individual contractors rather than overall service levels, Franckowiak says.

The four-member application support function team started the project by examining different approaches to improve management. It opted to go with just one vendor, charged with managing to a specified service level, Franckowiak explains.

IN-HOUSE WORK

Yet vendor selection was only part of the process. Much of the work needed for a successful outcome was done internally. Over two years, the team had to build consensus around the project within both the IT department and the business divisions, says application support manager Bart Leplae; communication was essential to success.

Leplae says team members also categorized applications as "gold," "silver" or "bronze" based on their importance to the business. Gold applications require the quickest resolution times.

Franckowiak says his team also used the project to gradually introduce offshore services and to develop and implement more detailed metrics to measure success and customer satisfaction.

Despite its ultimate success, the project presented some lessons to be learned.

For example, the IT team came to recognize the importance of having the vendor place the right employees in key management positions, Leplae says.

The team also had to push the vendor for continual process improvement, which the contract specified, says application support manager Frank Drust.

"We shouldn't be making all the recommendations. At first we were, but we had to push the vendor a little bit more; we wanted them to be proactive," he says.

Now, four years into the five-year contract, Drust says the process is running smoothly enough to allow that to happen. ■

Pratt *is a* Computerworld *contributing writer in Waltham, Mass. Contact her at marykpratt@verizon.net.*

"Making a switch from a head count to service-level approach was a major change. . . . But now, service levels are up, and costs are down significantly.

RICK FRANCKOWIAK, DIRECTOR OF THE TECHNOLOGY OFFICE, J&JPRD

Should We Tell the Boss?

Here are five things your boss always wants to hear — and five things he hopes you'll never tell him.

By Mary K. Pratt

AS AN IT PROFESSIONAL, you know the basic rules of office politics, the simple do's and don'ts that govern life at work. Adhering to these standards — the ones that tell you to be proactive and a team player — will help you keep your job. If you really want to advance, though, you need to know which types of information your boss relies on you to provide. ■ More isn't necessarily better, however, and discretion is everything. So, you also need to know the kinds of information your boss *never* wants to hear from you. ■ We asked a group of *Computerworld*'s 2008 Premier 100 IT Leaders to talk about the kinds of messages they need to hear loud and clear from their employees and the things they never, ever want to hear. Here's what they said.

Five Things You Should Always Tell Your Boss

1 THE REAL STORY.

"Sugarcoating problems, holding back information, overpromising and consistently underdelivering are all reasons why IT has a bad reputation. We do this so well, we don't even realize there is a problem," says Robert Strickland, senior vice president and CIO at T-Mobile USA Inc. in Bellevue, Wash. "To lead effectively, I need the complete picture, as do our customers and our suppliers. When information is withheld, you are protecting no one."

Neal Puff, CIO for Arizona's Yuma County, agrees, but with the caveat that this is not a license to vent. "People sometimes confuse the truth with their opinion," he says.

2 YOUR IDEAS.

"Bring me ideas to improve the business, even if they're outside of IT," says Kumud Kalia, CIO and executive vice president of customer operations for Toronto-based Direct Energy, an integrated energy company and part of Centrica PLC.

Sounds simple enough, but Kalia says workers are often reluctant to do this, thinking they have to go through established chains of command. But that's not necessarily the case. Bringing ideas straight to the top can help get initiatives going. "I can help get things launched and broker the appropriate conversations," Kalia says.

3 WHAT YOU WANT.

Ted Maulucci, CIO at Tridel Corp., a condominium developer in Toronto, tries to shift his workers into the jobs that they would enjoy most. It helps with employee retention, morale and productivity.

He points to one employee who loves working on hardware so much, he'll come in at 3 a.m. to tackle a new project.

That's why Maulucci wants to hear what his staffers want from their jobs and for their futures.

4 NO.

It takes courage to tell the boss that you don't agree, but it's better for all involved when you say no to suggested proj-

ects, timelines, budgets or technologies that just aren't going to work, says Michael F. Williams, executive director of IT for the Immune Tolerance Network of the Diabetes Center at the University of California, San Francisco, and CIO for the Department of Neurology's Epilepsy Phenome/Genome Project.

But saying no to ill-conceived ideas isn't the same as obstructing an entire project. "After you say no, don't make it impossible," Williams says. "You have to provide various alternatives and let me know the pros and cons."

5 YOUR SUCCESSES.

No one wants to spend each day hearing only about project setbacks, failed servers and unexpected downtime. Good news is welcome, too. Yet IT workers seem reluctant to promote the positive, Kalia says.

The thought doesn't occur to them, "or maybe they think that what they're doing isn't that special," he explains.

Whatever the cause of such reticence, Kalia says IT pros should change their mind-sets. He wants to hear about accomplishments so he can recognize them and offer pointers to do even better next time.

"But it's not only about learning what you've done so we can apply best practices," he adds. "It's about celebrating success so everyone can share in that."

Five Things You Should Never Tell Your Boss

1 ALL ABOUT THE TECHNOLOGY AND NOTHING ABOUT THE BUSINESS.

Acting like the business is terra incognita is a no-no. "Never tell me you don't know what the business wants, but you'll build it when they decide," says James E. Schinski, a vice president and CIO at Midwest Independent Transmission System Operator in Carmel, Ind.

Joseph J. Tufano, vice president and CIO at St. John's University in New York, agrees, saying IT workers need to tell him how technology can help the organization and its staffers do their jobs better.

"You bring so much more credibility to the discussion when you're presenting technology in the context of business," he says.

2 THAT THERE'S ONLY ONE SOLUTION.

"People can sometimes develop a fondness for a certain technology or programming language or manufacturer into almost a religion, but it's never the case that one type of solution is the proper one for all situations," says Yuma County's Puff.

"And when you develop an attitude like this, you're viewed as an obstacle or a roadblock," he adds. "People will assume you're just going to like it this way and you're not going to like it any other way."

3 NEGATIVE OPINIONS ABOUT YOUR COLLEAGUES.

It's a simple rule that can get overlooked when your team is struggling with a missed deadline or a failing project, but think before you point a finger, because bosses generally don't want to hear about it — especially if you haven't tried to work it out on your own.

"I want a team that works together and not one that's political, and if I see it happening, then I think people are trying to score points," says Kalia.

Of course, there are times when you need to discuss personnel issues with your boss. For example, Kalia wants to know from managers when workers are thinking of leaving.

Just be sure the boss really needs to know about the situation; then be discreet and objective.

4 THAT THERE'S NO WAY.

Strickland's position: Everything is possible.

"It may be impossible to deliver the exact goal, or it may be impossible to deliver the goal in the way it has been outlined, but before you say it is impossible, tell me some of the challenges you may face, and we can have a conversation about overcoming those challenges," he says. "You may be surprised by what you can accomplish if you let go of your biases."

5 A SURPRISE.

CIOs almost universally say they don't like surprises — particularly unpleasant ones.

Ian S. Patterson, CIO at Scottrade Inc., a St. Louis-based online brokerage firm, says he always prefers to hear news — good and bad — directly from his workers. So when someone comes by and starts with "I want to give you a heads up," it really catches his attention.

Moreover, it's a good bet that your boss prefers to hear that news sooner rather than later, says Gregory B. Morrison, CIO at Cox Enterprises Inc., an Atlanta-based media company and provider of automotive services.

"Getting help early could help keep a small problem from turning into a disaster," he says. ■

Pratt *is a* Computerworld *contributing writer in Waltham, Mass. Contact her at marykpratt@verizon.net.*

Fostering the Right Environment

WHEN IT COMES to talking with the boss, knowing what to say, when to say it and how to put it can be tricky for some people. Here are six ways that the person in charge can encourage the right conversations in the office:

- **Lead by example.**
- **Run a transparent organization.**
- **Accept failures gracefully and learn from them.**
- **Remind your team of what's appropriate and what isn't.**
- **Don't communicate things in anger or frustration.**
- **Tailor your communication method – from face-to-face to IM – to the message and the situation.**

– MARY K. PRATT

Shoveling Sand Against the Tide

The **frustrations** of slashed budgets and inadequate manpower **come to a head.** Is it **time for a change?**

Trouble Ticket

AT ISSUE: The frustrations of working without enough resources are mounting.

ACTION PLAN: Consider available options, including jumping ship for the private sector.

I WAS RECENTLY shocked to discover that one of our primary Web sites was not properly secured.

The site includes a form that recipients of our services fill out with personally identifiable information, including Social Security number, name and address. This was a security breach waiting to happen.

I literally ran down the hall to talk to the webmaster.

On my way, my mind was racing as fast as my feet were carrying me. I knew that the Web site had been secure a few years ago. What had changed?

As it turned out, when we implemented SSL a couple of years ago, we changed domain names for the Web site. But we had to keep the old domain name active for a while, forcing a referral to the correct page each time someone tried to access the old domain pages. A few important pages had been missed when the changeover occurred.

It took only half an hour to correct the problem, but the idea that people had been submitting confidential information without the proper security in place made me shaky. Still, I wasn't about to chastise the webmaster. It was just a human error. And human error is inevitable, given our lack of resources.

STRETCHED TOO THIN

The root cause of any problem we encounter in my state government agency is that we are sorely understaffed. Our webmaster, for example, is more than just a webmaster. He's also a Unix and Windows administrator, as well as an IT tech who takes a turn on the help desk. There's only so much the guy can do in the course of a week. And it's the same for everyone here.

Being understaffed means we have no time to check one another's work, or even our own.

The situation is a recipe for disaster without end. And when one disaster hits after another, you can't help but feel that there's no hope in sight.

Consider our intrusion monitoring. We have installed the technology to log events, but we can't afford to have someone monitor those logs full time or separate the false positives so that the system is a truly worthwhile tool for identifying events that need our attention.

We needed that technology, and when I made the request for it, I also requested funding for a new position so that we'd have a full-time staffer to monitor the system. We got the technology, but not the position. How do you convince the myriad layers of bureaucracy that one without the other is just a waste of money?

LOSING HOPE

The entire situation is a recipe for disaster with no end in sight. And when one disaster hits after another, you can't help but feel that there's no hope in sight.

Our slashed budgets are being cut again, and even future budgets are being trimmed as the economy slows to a crawl.

When I have a moment to take a look at the situation that I'm in at work, I see how crazy it is. I have an impossible job that keeps me switching between my manager hat and my techie hat multiple times each day. Things are so bad that it's becoming harder and harder to drag myself to work every day when I know all we can do is shovel sand against the tide.

At times like these, I wonder whether the grass is greener on the other side — in the private sector, that is.

I have a friend who used to be my partner in consulting. She has a very successful business and for years has been asking me to join her. It would be a big change for me.

My role, oversimplified, would be to accompany her on sales calls as the subject-matter expert who could explain in plain English to C-level executives why they need security technology.

I'm seriously thinking about it. ■

This week's journal is written by a real security manager, **"C.J. Kelly,"** *whose name and employer have been disguised for obvious reasons. Contact her at mscjkelly@yahoo.com.*

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Paul Glen

How to Get Value From Outsiders

THIS SUMMER marks my 20th year as an IT consultant. I've been fortunate enough to work with more than 100 companies, big and small, public and private, on three continents.

I've had the opportunity to observe how organizations derive value from outsiders, and how those relationships can enhance effectiveness and be cost-efficient. I've also seen that they can be useless or even destructive. There are probably few readers of this column who can't tell a tale of thousands or millions of dollars wasted by their employers on outsiders' services. So I thought that I'd share a simple secret I've learned about getting the best value from your services budget.

Here it is: Language matters.

It may seem like a small thing, but what you call the outsiders seems to make a difference in whether you get the value you expect. Whether you call them consultants, contractors, outsourcers, advisers, service providers, hired guns, partners, vultures, hacks, short-timers or some other name, it's not just semantics. Each label brings with it assumptions that structure the human interactions that take place daily at the tactical level.

Each label can have positive or negative emotional connotations for providers and clients, and those connotations shouldn't be ignored. Each term implies a different sort of role and dictates what the outsiders believe is expected of them.

Don't get me wrong. I don't think that any one label is superior to another. It's a question of fit between the label you use and the relationship you want.

Consultants will be asked different questions than contractors or hired guns. And if asked the same questions, they may offer different answers. Even if you're talking to the same human being, the way the provider conceptualizes his role is as important as the way the client does, and it will affect his response.

Getting budget often requires participating in a linguistic arms race.

Unfortunately, language also changes over time. The meanings of these words evolve, making it harder to communicate effectively with both insiders and outsiders about the value you truly expect. I'm not quite sure why this happens, but I'd have to guess that it's often the result of an unstated conspiracy between professional service salespeople and their customers. They both have incentives to bend language to make services seem more important and justifiable. Getting budget often requires participating in a linguistic arms race.

To get the best value from your outside service providers, follow these two simple rules.

1. Be clear about the value you want. This may sound obvious, but being articulate about how you want a relationship to benefit you and your organization is not a simple task. Just think about a current relationship and write down the value you want. Then ask yourself four questions about the relationship:

- Is that really what I want?
- Is that all I want?
- Will my wants change over time?
- Does everyone else want the same things?

If you can get everyone involved in a project to agree to a value statement in less than an hour, I'd be surprised.

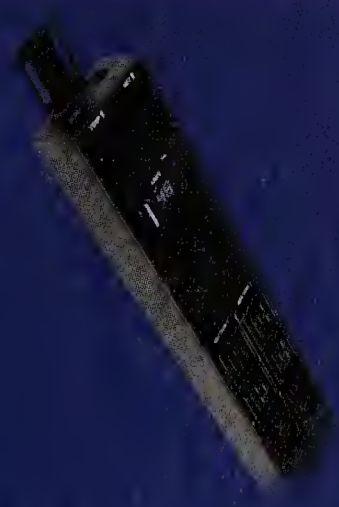
Because it's difficult, most clients skip this step completely. Everyone assumes that they know what they want and that everyone else wants the same thing. This is rarely the case. And most providers are happy to skip this too, since getting consensus may delay or jeopardize a sale.

2. Use language that is consistent with the value you want. If you want a spare set of hands, hire a contractor. If you want a managerial adviser, hire a management consultant. If you want to have someone handle desktop support, hire an outsourcer.

If you think about these relationships carefully, you can get what you want. But it all starts with what you call them. ■

Paul Glen *is the founder of the GeekLeaders.com Web community and author of the award-winning book* Leading Geeks: How to Manage and Lead People Who Deliver Technology *(Jossey-Bass, 2003). Contact him at info@paulglen.com.*

Has your power hungry data center become a Monster to manage?



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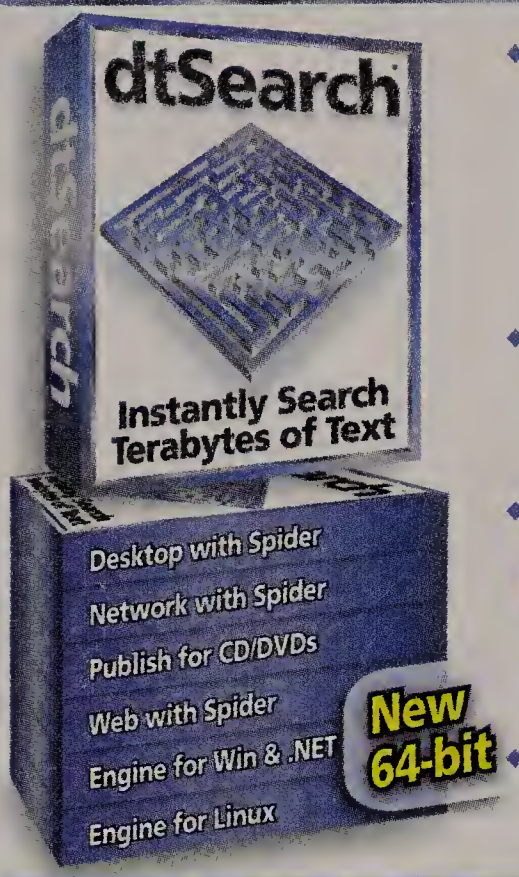

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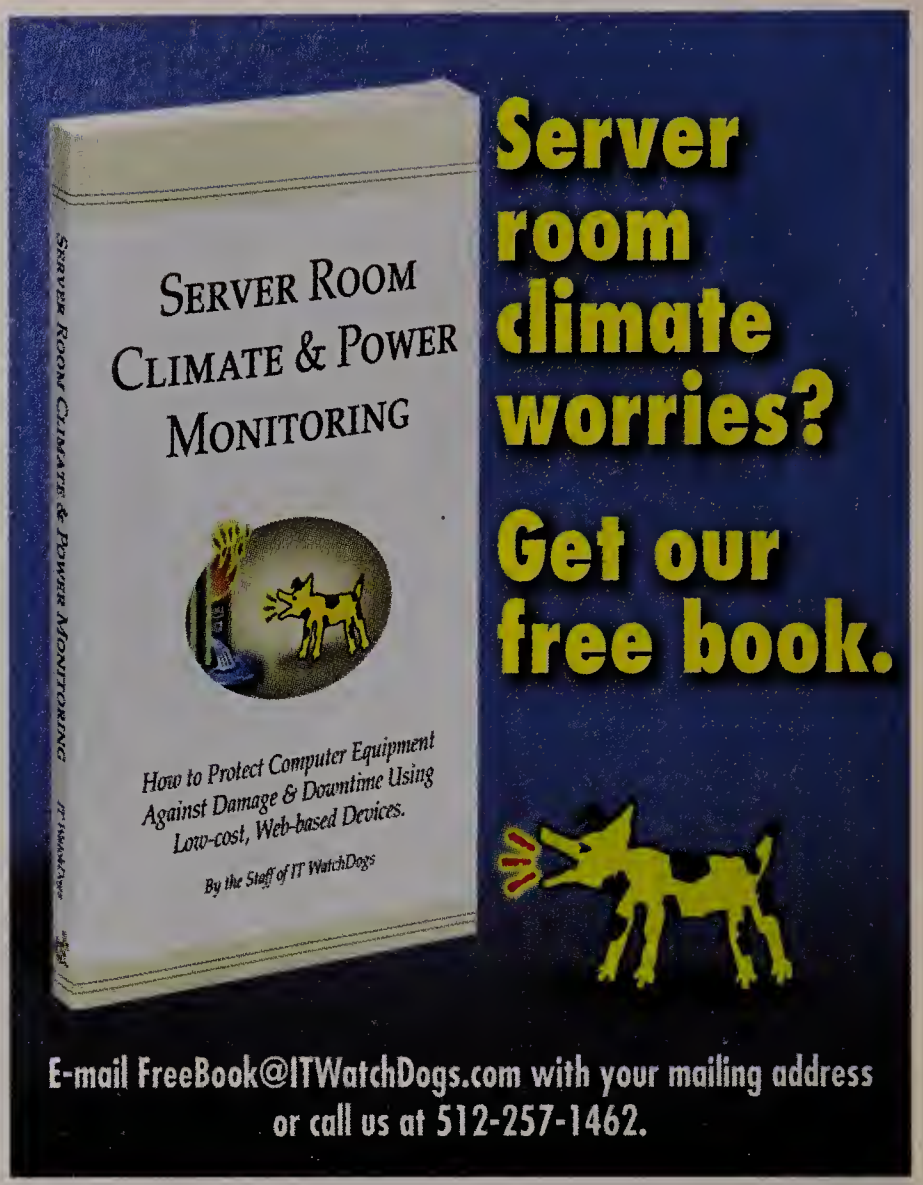

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Career Watch

Don't Stress Out About Calling In Sick

Employers in both the U.K. and Australia are looking at voice analysis technology that they think could help reduce absenteeism. The technology makes thousands of checks on a voice in the course of a telephone call. A tool called Voice Risk Analysis, developed by Nemesysco Ltd. and DigiLog UK Ltd., has been used to reduce benefits fraud in the U.K.: A North London borough, for example, saved £420,000 ($832,837 U.S.) in false claims during a product trial. The tool listens in on calls and prompts the manager if it detects changes in the caller's voice that suggest he is under stress, a possible indication that he is lying.

Susan Anderson, personnel policy chief at the Confederation of British Industry, was quoted in a May 14 *Mail Online* story as saying that "pulling a sickie" (or, in another bit of British slang, "swinging the lead") costs U.K. businesses £1.6 billion ($3.17 billion) annually.

SAPped Workforce

For the seventh consecutive quarter, Foote Partners LLC's Pay Index shows that the average pay for a large group of IT certifications declined, falling 1.6% in the six months that ended April 1. But salaries for a similarly large group of noncertified skills have continued to advance for an even longer period, since mid-2005. That group of 164 skills saw salaries rise nearly 2% over the same six-month period.

Foote Partners notes that the increase in pay for noncertified skills is due in no small part to competition for IT professionals with experience in various SAP applications. David Foote, CEO and chief research officer of the Vero Beach, Fla., firm, said in a press release that SAP has "caused skills and labor shortages that have gripped sizable segments of the employment market in North America and around the world and created some nasty supply and demand fluctuations."

Only one SAP skill is among the top five for average pay increases over the most recent six-month period, but eight are in the top 25.

THE BIG GAINERS

Top five noncertified skills, plus seven other SAP skills that made the top 25:		Percentage change for the six months that ended April 1
1	Network security management	25%
2	Wireless network management	22.2%
3	Business intelligence	20%
	PHP	20%
	SAP Master Data Management	20%
7	SAP ERP	18%
8	SAP NetWeaver BI	16.7%
10	SAP Business Objects	12.5%
14	SAP Human Capital Management	11.1%
19	SAP Customer Relationship Management	10%
	SAP Materials Management	10%
22	SAP NetWeaver Applications Server	9.1%

Slowdown Hits IT

IT has been among the more resilient sectors of the economy this year, but the overall slowdown is having an effect there as well. The most compelling evidence of that may be Janco Associates Inc.'s 2008 Mid-Year IT Salary Survey. That study, with more than 20,000 participants, finds that hiring demand is currently the lowest it has been since 2004. It also reports that many companies have stopped hiring except for key replacements, and those hires are coming in at lower salaries.

What's more, Janco says that companies have slowed or even ceased discretionary spending by IT, resulting in fewer projects being initiated and the use of consultants being reduced or even eliminated.

And Janco found that over the past 12 months, compensation increases for IT workers failed to keep up with the cost of living. By level, executives and middle managers of large companies did best, but their mean salary increases were just above 1%.

SALARIES INCH UP

Average base and total compensation for large categories of IT professionals at large and midsize companies. ("Change" refers to percentage change in total compensation.)

	June 2007 Mean		June 2008 Mean		
	Base	Total	Base	Total	Change
LARGE COMPANIES					
Executives	$127,620	$143,106	$128,491	$144,645	1.08%
Middle managers	$75,143	$78,845	$76,073	$79,777	1.18%
Staff	$63,146	$66,517	$63,186	$66,433	0.12%
MIDSIZE COMPANIES					
Executives	$116,838	$131,321	$116,666	$131,793	0.36%
Middle managers	$71,009	$74,645	$70,949	$74,701	0.01%
Staff	$58,352	$60,442	$58,647	$60,736	0.49%

SOURCE: JANCO ASSOCIATES INC. 2008 MID-YEAR IT SALARY SURVEY

PAGE COMPILED BY JAMIE ECKLE.

IT careers

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Shark Tank

TRUE TALES OF IT LIFE AS TOLD TO SHARKY

Try, Try Again

Hospital IT help desk gets a call from nurses in the clinic who say they're having trouble adding paper to their laser printer. "They told the tech that the eject button for the paper tray was not working properly," says a pilot fish there. "Since it didn't eject the paper tray when it was pushed the first time, they pushed it harder a number of times, and now there was no power to the printer." But the tech is puzzled. There's an identical printer in the IT offices and it has no eject button – to add paper, you just slide out the paper tray. A quick trip to the clinic solves the mystery: The printer's power switch has been jammed completely into the case. Says fish, "The nurse on-site swore that she always had to push this 'eject button' to release the paper tray to load paper – and she had trained quite a few others to do the same. When the tech calmly explained that was the power switch and now the printer was definitely broken, the nurse's reply was, 'Can't you just swap it with a spare one you have somewhere?' "

Pop Quiz

This support pilot fish divides users into two groups: those who can help him diagnose a problem, and those who lead him down a rathole if he believes anything they say. And he finds that a few test questions can usually identify which is which. Case in point: a user who says that since she got a wireless mouse, her monitor won't work when she starts her home PC. Fish: Are the cables plugged firmly into computer and monitor? User: "Yes." Are the power cords plugged into a multiple-outlet strip? "Yes." Are there separate power switches for the computer, monitor . . . "Yes, yes." . . . The keyboard and mouse, too? "Yes, yes, yes, yes!" Are the power switches on the multiple-outlet strip for the keyboard and mouse turned on? "*Yes!*" Sighs fish, "She failed the test. I told her, 'Well, I'm not quite sure what the problem is. Why don't you try plugging in a standard mouse and call me back tomorrow?' "

Oops!

Desktop tech is upgrading users to new laptops and transfers this user's data to a new machine, reports a pilot fish on the scene. "He leaves the old laptop, which is three years old, with her in case there are files she forgot to request be moved," fish says. But two weeks later, when it's time to collect the old machines, there's a problem. "The tech calls to make arrangements to pick up the laptop," says fish. "She tells him that she donated it to her favorite charity. He asks why and she says that since he left it with her, she thought he wanted her to take care of disposal."

■ *Sharky will gladly take that true tale of IT life off your hands. Send it to me at sharky@computerworld.com. You'll score a sharp Shark shirt if I use it.*

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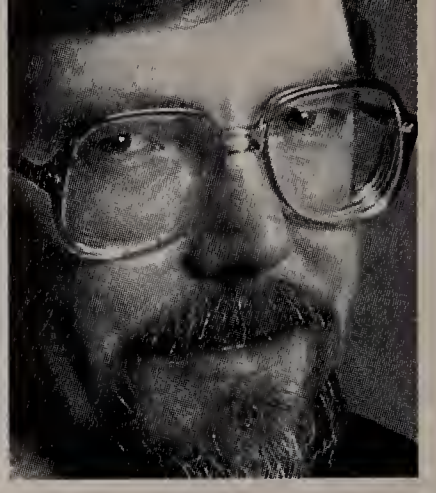
Frank Hayes

Fix DNS Now



IF YOU'RE a hard-core IT security wonk, you already know about this. If not, go to Doxpara.com right now and click on the button that says "Check my DNS." That will run a simple test to tell you whether your name server appears to be vulnerable to DNS cache poisoning.

No, really — right away. Doxpara.com. Go. Now. We'll wait.

Did the test say that you're vulnerable? Then you've got work to do.

Did it say that you're not? You've still got work to do.

Here's why: Early this year, security researcher Dan Kaminsky discovered a design flaw in the Internet's Domain Name System, which translates names like Computerworld.com into IP addresses such as 65.221.110.98.

Kaminsky didn't find a bug in one DNS implementation. He found a vulnerability that's designed into *every* DNS server. That's right — they're *all* broken. Microsoft's version. And Cisco's. And BIND, which is widely used on Unix and Linux servers.

The design flaw allows an attacker to hijack domain names. Put simply, a victim would never know where the Internet was taking him. E-mail could be redirected. Web sites could be spoofed. Everything on the Internet is at risk if an attacker takes over the DNS.

How do you fix a fundamental design flaw that affects the entire Internet? Answer: You can't. So you don't. Instead, you find a way to make the design flaw much, much harder to exploit.

Kaminsky contacted Paul Vixie, who has been responsible for the BIND DNS server since 1988. Vixie called together the top DNS experts. In March, they secretly started work on the job of patching every major DNS implementation. Not with a fix — that would be impossible — but with a work-around.

On July 8, they all rolled out their patches at the same time (see story, page 12). Microsoft. Cisco. AT&T. Sun. Red Hat. The BIND guys. Everybody.

This is not 'a patch' to fix 'a bug.' This is a wake-up call for virtually the whole IT industry.

This is not "a patch" to fix "a bug." This is a wake-up call for virtually the whole IT industry. The entire Internet needs fixing. Yes, right now. And that includes every corporate network and every ISP.

Here's the good news: Because the flaw Kaminsky discovered is so baked into DNS, because it literally can't be fixed, the only good way to block it is to make it really hard for attackers to do *anything* bad to a DNS server. That's what last week's patches do.

As a result, those patches protect you not only from the design flaw Kaminsky discovered, but also from lots of other bugs that have been found over the years — and from bugs that haven't yet been discovered. It's the biggest and most effective Internet security fix ever.

You want these patches on your DNS servers. You need them. If you're a CIO or an IT manager and you failed that test at Doxpara.com, you should start asking your networking guys when you'll no longer be vulnerable.

If you didn't fail the test, don't get cocky. Sure, the DNS server you're using is good. But are *all* of your network's DNS servers safe? What about the DNS servers of ISPs that your users connect to when they're on the road or working from home? What about business partners who connect to your systems across the Internet? They all need fixing.

And it won't all be as simple as testing and installing patches. Some older DNS servers haven't been patched. They'll need upgrades. Yahoo, for example, uses BIND Version 8. There's no patch for that, so Yahoo is upgrading its entire infrastructure.

See? There's work to do. Get to it. Now. Don't wait for the bad guys to figure out how to exploit this DNS flaw.

Because once they do, they won't wait for you. ■

Frank Hayes *is* Computerworld*'s senior news columnist. Contact him at frank_hayes@computerworld.com.*

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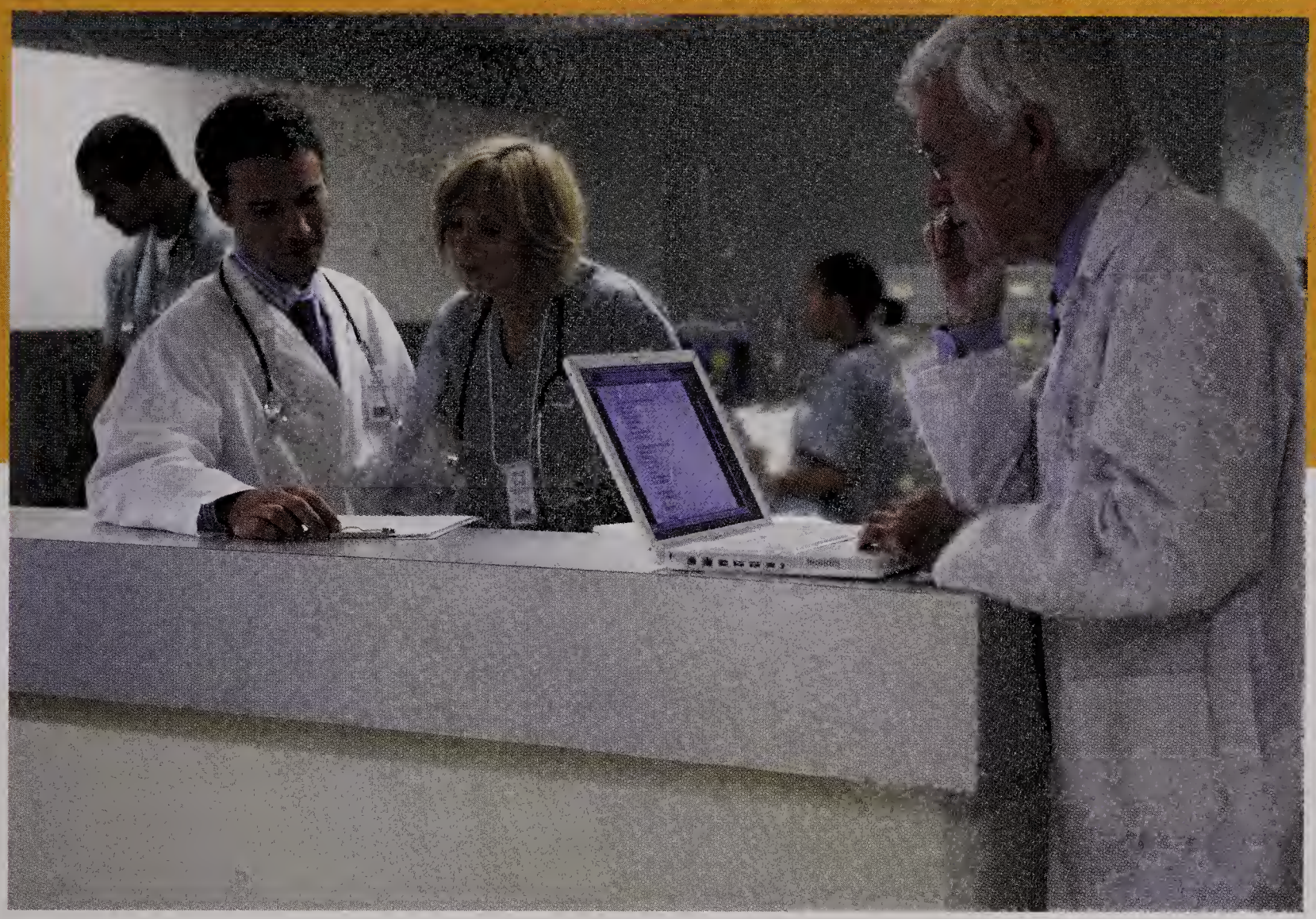

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